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ORIGINAL ARTICLES.

A RAPID AND SIMPLE OPERATION FOR GALL-STONES FOUND BY EXPLORING THE ABDOMEN IN THE COURSE OF A LOWER ABDOMINAL OPERATION.

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I HAVE dwelt elsewhere (see MEDICAL NEWS, Dec. 16, 1899) upon the importance of utilizing an abdominal incision which is over 8 centimeters in length, for the purpose of investigating the condition of all the important viscera which are accessible to touch, provided the condition of the patient is satisfactory and there is no technical objection to the slight delay involved. I desire now to speak of a simple and satisfactory method of removing stones when found in the gall-bladder in this way.

When the incision is made in the lower part of the abdomen either in the median line, or as I have made it in one instance, over the site of the vermiform appendix, the hand is introduced into the abdomen hugging the abdominal wall, conducted up over the omentum and the colon as far as the liver where the gall-bladder is easily discovered in its notch on the right, as a somewhat tense or flaccid sac filling the fissure and projecting out a little beyond the hepatic border. It is my practice to squeeze the gall-bladder and note the rapid collapse showing that the cystic duct is pervious. If there is a stone present it is easily felt through the thin walls by palpating from the cystic duct up toward the fundus. In order to remove a stone, if the gall-bladder is much distended, it should first be emptied by compression between the thumb and two fingers; this allows the stone to be grasped or rather hooked up by the first and second fingers to the top of the gall-bladder, where the stone is then lifted firmly up against the abdominal wall which is thrust forward until a distinct eminence appears on the skin surface just below the margin of the ribs. Care must be taken not to allow any loop of intestine or the margin of the liver to intervene between the bladder and the abdominal wall.

An incision about 4 or 5 centimeters in length is now made with the free right hand, down through the abdominal parietes over the eminence directly upon the stone, cutting straight through layer by layer in a vertical direction. The pressure from within keeps the tissues anemic as skin, fat and muscle are successively divided. The white peritoneum is easily recognized, and on reaching this layer a little nick is made and the two edges caught with mosquito forceps; as the peritoneal incision is made a little larger, the gall-bladder with the stone appears in the incision, is opened and its edges caught as the incision is made large enough to evacuate its contents; the stone may then clear the opening suddenly and land on the floor some distance from the table. The edges of the gall-bladder, held up by four of Halsted's delicate mosquito forceps, are now united by a fine silk suture beginning at one end of the incision and continued to the other, embracing all the coats but the mucosa. The same suture is then continued back to the starting-point as a quilted suture, burying the first layer, when the ends are tied together. If the gall-bladder is normal I do not hesitate to drop it without a drain. If the walls are diseased I drop the gall-bladder after closing with interrupted sutures and insert a small drain provisionally. The abdominal wound is then closed and the operation completed within a few minutes of its commencement. There is no danger of contamination of the peritoneum with bile as the gall-bladder is drawn well up into the parietal incision and the peritoneal opening thereby closed.

One of the first cases in which I resorted to this mode of discovering and removing a gall-stone was under the following unusual circumstances: The patient was a man, about forty years of age, in the care of Dr. Yost of Glen Rock, Pa., to whom I am indebted for the opportunity of seeing and treating him. He had always been healthy until he was stricken with typhoid fever November 1, 1898. Previously both his wife and daughter had been severely ill with the same disease and he had nursed them himself and remained in almost constant attendance. In its onset and its course his attack was a typical one. For the first ten days the temperature in the morning was 101° F.; in the evening 102.5° F.; for the succeeding ten days the morning temperature was 102.5° F., the evening temperature 104° to 104.5° F.; after this there was a gradual defervescence for three weeks followed by a slight recrudescence for a week, when the evening temperature reached 103.5° F. He was free from fever at about the thirteenth week. The bowel symptoms were never severe, there were no bloody discharges and no tendency to constipation, but there was some abdominal pain and slight distention. There was never any jaundice during the entire course of the attack. During the latter part of February, 1899, he had a slight attack of colic about the umbilical and the right iliac regions with some tenderness, lasting three or four days. After this the convalescence progressed in a perfectly normal manner with a fair appetite, digestion and nutrition.

*Address delivered before the Southern Surgical and Gynecological Association, Atlanta, Ga., Nov. 15, 1900.

At three o'clock in the afternoon of March 20, 1889, he complained suddenly of a severe colicky pain in the umbilical and right iliac regions, which increased steadily in spite of warm application, hypodermic injections of morphine and enemata of hot water; the pain was associated with some retching, slight vomiting and a desire to defecate frequently without result, he passing neither fecal matter nor any of the water of which one gallon was injected. Dr. Yost then fearing perforation of the bowel telegraphed for the writer, who operated with the aid of Dr. Thos. R. Brown, at 9 P. M., March 21, 1899.

The appendix seemed to be the likeliest seat of the trouble, so the incision was made over the right iliac fossa; when the abdomen was opened it was found filled with thin, watery, somewhat sticky fluid of a dark color but with no odor. There were no evidences of suppuration, but the intestines, uniformly injected and lack-luster, showed a general peritonitis. The appendix was normal, save the general injection covering its surface. Inasmuch as the color of the fluid in the abdominal cavity suggested bile, the incision was enlarged, the right hand and forearm introduced and the liver palpated. No rent could be detected in the collapsed gall-bladder, but a single large stone was distinctly felt.

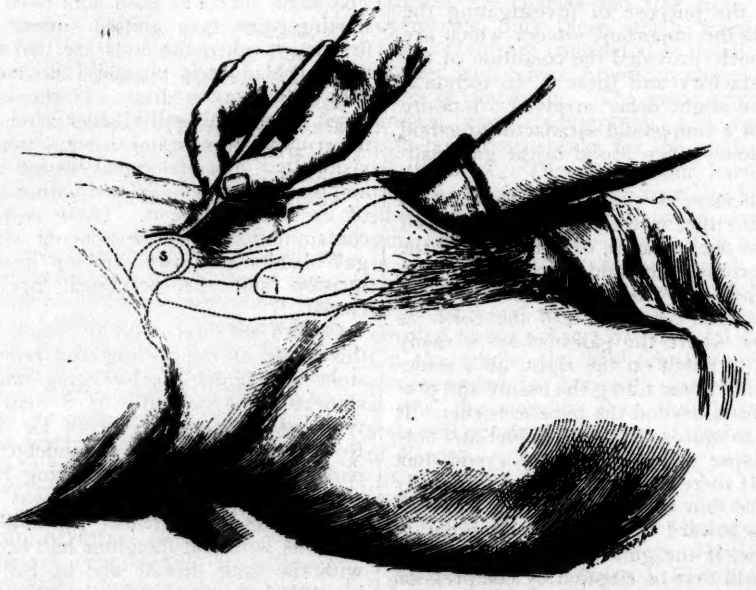
Proceeding then on the assumption that the gall-bladder was ruptured, the stone was caught between two fingers and pressed up against the abdominal wall by means of the hand inside the abdomen. Then with the other hand the overlying tissues were cut through until the gall-bladder was exposed, excised and its edges caught with artery forceps on either side, when suddenly a large, clear, shining biliary calculus popped out and fell on the floor, rolling toward a crowd of some seventeen spectators, friends of the family crowded into the little attic room to witness the operation.

The point of rupture could not be found, therefore the incision in the gall-bladder was sutured to the abdominal opening and the bladder drained with several pieces of narrow iodoform gauze. The lower incision was also drained, after thoroughly washing out the abdominal cavity, with washed-out iodoform gauze.

The convalescence was uneventful, the temperature never rose above 100° F., although the pulse continued high for several days after the operation. The stools were somewhat constipated, of a grey color and clay-like consistency for about five weeks, when they gradually assumed a normal color as the cystic fistula closed and the bile resumed its natural channel. The discharge of bile through the fistula was very free for eighteen days and then ceased quite abruptly. The drains were removed gradually, the last piece being taken out on the thirty-third day. The urine was dark colored for about four weeks when it gradually assumed a normal color. The patient had never previously passed any biliary calculi to his own knowledge.

The gall-stone was about 1.5 x 1 x 1 cm., purely translucent and entirely without any traces of pigment; the analysis showed that it consisted of pure cholesterin.

FIG. 1.



The left hand, covered with a glove, is introduced through the incision above the symphysis; the gall-bladder is found and the stone pushed up into the fundus and against the abdominal wall where it makes a decided prominence. The free hand is next engaged in liberating the stone by cutting directly down through the tissues of the wall until the bladder is opened and the stone escapes.

Cultures, made subsequently from the abdominal cavity and from the bile as it issued from the fistula and from the center of the stone in the hope that typhoid bacilli might be found, proved negative. A chemical examination of the fluid obtained from the abdominal cavity showed that it contained the biliary pigments and the glycocholate and taurocholate of soda. It was therefore certain that there was a rupture of the gall-bladder and that the severe abdominal symptoms had been produced by the peritonitis set up by the irritating biliary salts.

The patient came to my office ten months later, with his incisions perfectly healed and in excellent health.

In addition to the case just related, I have operated upon seven others, all women.

Case II. was a difficult hysteromyomectomy, performed April 1, 1899, on a married woman thirty-nine years of age. After checking all the hemorrhage in the pelvis, the right arm was introduced and the other abdominal viscera palpated. A large irregular stone was found in the gall-bladder; this was caught by two fingers and pushed up into the fundus against the abdominal

FIG. 2.

The incision in the abdominal wall, showing the deep fascia held up by four, and the incised gall-bladder held open by two pairs of mosquito forceps. The stone is seen in the middle ready for delivery.

wall. With a scalpel in the left hand the tissues were then divided in a vertical direction until the gall-bladder was exposed, when it was incised and its edges secured with forceps; the incision was then enlarged and the stone, which was black and about 4 x 3 cm. in diameter, was pushed out. The gall-bladder was drawn out of the wound to one side and surrounded by gauze until the opening was closed by mattress catgut sutures, the abdominal wound was then closed over the gall-bladder, after which the abdomen below was also closed without drainage. I saw this patient twenty months after the operation in greatly improved health without any complaints referable to the operation.

Case III. was a woman, thirty-two years of age, operated upon April 22, 1899, for a myomatous uterus from which two tumors were removed together with one left broad ligament myoma. The uterine incisions were all closed with catgut, after which the remaining abdominal organs were examined through the incision. The gall-bladder was found to contain two stones which were removed as in Cases I. and II. The incision in the gall-bladder was closed with interrupted catgut sutures, after which both abdominal incisions were closed without drainage. The recovery of the patient was uneventful.

Case IV., a patient of Dr. August Horn of Baltimore, was a married woman, sixty years of age, with a large multilocular cyst of the right ovary. After removing the cyst, in palpating the other organs the gall-bladder was found to contain stones. The abdomen was lax and the gall-bladder was drawn down near the upper end of the wound which extended almost to the umbilicus; after surrounding it with gauze it was cut open and the stones removed. The opening was then closed with two rows of mattress sutures of fine silk, easily applied in the thickened walls of the bladder. The abdomen was washed out and the wound closed without drainage. The stones were all dark in color, the largest one being 3 cm. in diameter.

The convalescence was uneventful and without pain; the highest temperature was 100.5° F. on the second day.

Case V. was a patient of Dr. Fry of Washington, operated upon May 23, 1900; the patient, forty-eight years of age, had a large ovarian cyst; after removal of the tumor, in palpating the other abdominal organs the gall-bladder was found choked with a mass of large stones; it was pushed up against the abdominal wall and opened by a longitudinal incision and 20 stones removed varying in diameter from 3½ to 1 cm. The gall-bladder was then sutured by interrupted fine silk sutures, and dropped back into the abdomen with a small iodoform-gauze drain. The abdominal wound from below was closed completely. There was no leakage at all from the gall-bladder, and upon removal of the drain upon the seventh day the opening closed without suppuration.

Case VI. was a woman, fifty-three years of age, a patient of Dr. J. A. Evans of Baltimore; was operated upon October 18, 1900, for a large myomatous uterus filling the lower abdomen. The uterus was removed by hysteromyomectomy from left to right; in order to get it out, it was necessary to make a long incision up to the umbilicus. After completing the pelvic operation and examining the other abdominal viscera, the gall-bladder was found shriveled, white and much thickened, and containing stones. The gall-bladder was drawn toward the upper end of the incision, its fundus incised and two large black stones removed. The walls of the gall-bladder were about ½ cm. in thickness and moderately vascular; the incision was closed by interrupted fine silk sutures. The median abdominal incision was closed up to the upper angle where a fine gauze drain was laid down to the gall-bladder. The patient made an excellent recovery, but with the discharge of a moderate amount of sticky fluid, evidently coming from the gall-bladder, which continued for several weeks.

Case VII. was a patient operated upon November 17, 1900, for a large myomatous uterine

body filling the lower abdomen; it was necessary in order to get it out to make an incision extending from the symphysis up to the umbilicus. After taking out the tumor and palpating the other abdominal viscera a stone was found in the gall-bladder. This was then removed by drawing down the liver and pulling up the long incision to the right side. After packing off the gall-bladder with gauze the incision was made and the stone extracted; the wound was then closed with silk sutures. No drain was used.

Case VIII. was a woman, forty-four years of age, upon whom I performed hysterectomy for a large fibroid uterus filling the lower half of the abdomen; it was necessary, in order to remove the mass, to extend the incision from the symphysis pubis up through the umbilicus and 8 centimeters beyond it. After completing the pelvic operation and examining the rest of the abdominal viscera, a long vermiform appendix was found buried in adhesions and concealed behind the colon, the right kidney was movable, and the transparent gall-bladder was seen full of stones from 1½ cm. in diameter and smaller. Dr. G. B. Miller, who completed the operation, opened the gall-bladder and removed 32 stones, closing it by two layers of fine silk sutures.

Dr. Peters finds, upon going over my anesthesia slips, that I have dictated notes as to the condition of the gall-bladder in 49 cases and stones have been found and removed in 8 per cent. of these.

I offer no apology for removing these foreign bodies by an operation so simple and so safe when the abdomen is once opened for some other more serious cause.

I need but to refer to the distressing sequelæ of a cholecystitis, or a cholangitis, once the stones give rise to an infection and afford by attrition of the mucosa the portal of entry in the surrounding tissues, or, on the other hand, to the miseries of a patient whose stone has begun to wander down toward the duodenum. A still more cogent reason is perhaps found in the frequency with which stones are associated with cancer of the gall-bladder.

In connection with my recommendation to remove gall-stones whenever they are discovered in this way the question of their relative frequency becomes a matter of considerable importance.

Naunyn (*Klinik der Cholelithiasis*, Leipzig, 1892) quotes the frequency of gall-stones from the pathological records of the following clinics:

Peters (Kiel)	5	per cent.
Rother (Munich)	6	" "
Fiedler (Dresden)	7	" "
Schloth (Erlangen)	7.2	" "
Roth (Basel) I.....	9	" "
Roth (Basel) II.....	10.9	" "
Frank (Vienna)	10	" "
Schroeder (Strassburg) .	12	" "

Schroeder's material covering all ages shows that there is a remarkable increase in the percentage according to age.

TABLE I.

No.	Initials.	Physician.	Date of Oper.	Primary Operation.	Stones.	Gall-Bladder Operation.
1	S.	Dr. G. P. Yost.	Mch. 21, 1899.	Lateral incision over vermiform appendix.	One pure cholesterin.	Incision below the ribs. Gall-bladder sutured to abd. opening, drain. Recovery.
2	M. G.	Dr. E. S. Fruitt.	Apl. 1, 1899.	Median Incision. Hysteromyomectomy.	One large, rough, black stone.	Incision below the ribs. Gall-bladder drawn out of wound and surrounded by gauze. Closed by mattress catgut sutures. No drain. Recovery.
3	E. S.	Dr. D. B. Sprecher.	Apl. 22, 1899.	Median Incision. Myomatous uterus.	Two stones; one the size of a horse-chestnut.	Incision below the ribs. Gall-bladder closed with interrupted catgut sutures. Recovery.
4	B. B.	Dr. A. Horn.	Apl. 9, 1900.	Median Incision. Multilocular cyst of right ovary. Wound extended almost to umbilicus.	One large stone 3 cm. in diam. and several smaller ones. Dark in color.	Gall-bladder drawn down near upper end of median incision, isolated with gauze, opened. Closed with two rows of mattress silk sutures. No drain. Recovery.
5	L. H.	Dr. Henry D. Fry.	May 23, 1900.	Median Incision. Large ovarian cyst.	Twenty stones, 3¼–1 cm. in diam.	Gall-bladder exposed by an infracostal longitudinal incision. Closed by interrupted silk sutures. Small iodoform gauze drain. No discharge. Recovery.
6	J. T.	Dr. J. A. Evans.	Oct. 18, 1900.	Median Incision. Large myomatous uterus. Hysteromyomectomy.	Two large black stones.	Gall-bladder drawn down into median incision and stones removed. Closed by interrupted silk sutures. Fine gauze drain to gall-bladder. Recovery, with discharge of some sticky fluid for several weeks.
7	M. S.	.....	Nov. 17, 1900.	Median Incision. Large myomatous uterus. Hysteromyomectomy.	One clear cholesterin stone.	Gall-bladder packed off with gauze and incised through large median abdominal incision. Gall-bladder completely closed with silk sutures.
8	R. C.	.....	Nov. 24, 1900.	Median Incision Large fibroid uterus. Hysterectomy.	Thirty-two small stones, 1¼ cm. in diam. and smaller.	Gall-bladder drawn down into median opening and incised. Closed by two layers of fine silk sutures. First, mattress; second, continuous.

Age.	Sections.	Cases with gall-stone.	Percentage of gall-stone cases.
0–20	82	2	2.4
21–30	188	6	3.2
31–40	209	24	11.5
41–50	252	28	11.1
51–60	161	16	9.9
60 and over.	258	25	25.2

Of these it is remarkable that 4.4 per cent. were in men and 20.6 per cent. in women, and it is stated that stones were found much more frequently in women who had borne children.

I am not aware that statistics of any considerable number of cases have ever been presented from this country. With the permission of my colleague, Professor Wm. H. Welch, I asked Dr. Clelia D. Mosher, assisting me in my private gynecological work, to review a thousand autopsies made in the Pathological Department of the Johns Hopkins Hospital to investigate this point. The results of Dr. Mosher's excellent labors demonstrated that biliary calculi were found in 59 cases or 5.9 per cent.; in 31 or 4.8 per cent. of the males and in 28 or 7.8 per cent. of the females.

SOME NOTES ON THE TREATMENT OF RHEUMATISM.[1]

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It is not my purpose to discuss elaborately either the nature of rheumatism or its treatment, but, in offering some suggestions based upon my own experience in the treatment of the disease, it is necessary to consider briefly the nature or pathology of the malady.

Acute articular rheumatism is in all probability an infectious disease, although the infective agent has not been positively determined. The older theories regarding the nature of rheumatism have proved inadequate in the light of modern research. It does not any longer suffice to say a disease is dependent upon a dyscrasic state; we recognize that the term dyscrasia is but a cloak of ignorance. If it be intended to imply a constitutional, inherited or acquired weakness of some sort that renders one person more liable to a disease than another, it may be true that rheumatism is favored by such a condition, but in this sense pneumonia is equally dependent upon a dyscrasia. If, again, dyscrasia comprehends a disorder of the blood or of the juices of the body, it remains to prove the existence of such a disorder and its chemical or vital character as contrasted with the existence in the circulating liquids of infective microorganisms. The various hypotheses regarding the rôle of acids of one kind or another have been disposed of by chemical studies, although much remains to be learned of the metabolism of the disease. The nervous theory of rheumatism needs little or no discussion. Nervous disorders undoubtedly attend and follow the disease, but the causal relationship has been especially traced by those who have confounded rheumatoid arthritis and articular rheumatism.

The infective theory rests upon the peculiar symptoms, course and complications, and the discovery in the lesions of the latter of various micro-organisms. It has been further suggested by the association of rheumatism with certain local infective processes such as tonsillitis and suppurative foci of various localities. The specific organism has not, however, been isolated, or at least the claims to specific relationship have not been established for any one of the several bacteria that have been obtained from the local lesions, the blood, and the urine of cases of rheumatism. The majority of the bacteriologic studies agree in having discovered some form of micrococci, mostly staphylococci; and the same organisms are generally found upon the diseased valves in cases of rheumatic endocarditis. A peculiar bacillus has been isolated in some cases, and has been regarded as specific by some investigators.

It is the opinion of many that rheumatism is a form of infection closely allied to pyemia, but differing in the localization of the lesions and the virulence of the infection from other cases of pyemia. The suggestive resemblance of pyemic arthritis is of importance in this connection. Ordinarily, the latter variety of joint disease differs in clinical and pathologic characters from that which we call articular rheumatism; but a close analysis of series of cases leaves no doubt that there is a gradual merging of one group into the other so that it is impossible to establish a line of separation. The less virulent, polyarticular and cryptogenetic forms of arthritis are called rheumatism; the severe, often monarticular, and manifestly secondary, cases are put down as pyemic. In the same connection it must be confessed that no very definite distinctions can be traced between rheumatism and the rheumatoid conditions associated with such infections as scarlatina, gonorrhea, dysentery, etc. There is doubtless a difference in the etiologic cause in these different forms of disease, and there is correspondingly a difference in their nature, but the difficulty of differentiation must be recognized to appreciate that articular rheumatism as we now understand it is a clinical condition rather than an established pathologic entity. Just as in the case of pneumonia forms caused by different micro-organisms have a very close resemblance in their manifestations, so in rheumatism it is likely that a variety of micro-organisms of moderate virulence may operate to produce a similar pathologic result. The result in question is a serous or serofibrinous inflammation of the joints, the pleura, the endocardium, pericardium, etc., with as a rule moderate systemic infection or intoxication.

In considering the question of treatment it is important to recognize several fundamental facts. First, the tendency in many cases of rheumatism is toward spontaneous recovery. This may occur in a few days and after very mild symptoms, but sometimes only after a prolonged course. These facts should have been more thoroughly appreciated by those who advocated suggestion and other hypnotic measures of treatment. Second, complications, such as pleurisy, endocarditis, pericarditis, etc., are frequent and are more likely to occur in protracted cases than in those of short duration. Third, the complica-

[1] Read by title at the meeting of the Medical Society of Pennsylvania, September 19, 1900.

tions are probably as a rule secondary to the joint disease and not to the infective lesion (such as tonsillitis) that was the primary focus; consequently the severity of the local joint lesions bears a relation to the likelihood of the development of complications. I state these views as probable not as absolutely proved.

Of the drugs that have been used in the treatment of rheumatism, the derivatives of salicylic acid deservedly occupy the first place in professional estimation. Salicylic acid is not, as far as we know, a specific. In many cases it fails entirely; in a greater number it is beneficial in relieving pain and other symptoms, but fails to give complete relief; in some cases its action is so immediate and final that the term specific seems almost justified. How much this difference in action of the drug depends upon etiologic differences in particular cases is unknown. The possibility of such an explanation of the failure or success of the treatment cannot, however, be denied. I am reminded of an experience in a case of rheumatic pleurisy in which the fluid in the chest disappeared with remarkable rapidity after the administration of salicylate of soda, and of other less striking but suggestive results under similar circumstances. The efficiency of the drug in rheumatic pleural effusions has been too frequently observed to permit the belief that the results have been mere coincidents; and the rapidity and thoroughness of action indicate a relationship of the drug to the disease or some cases of the disease that warrants a place near to the remedies we term specifics. One is reminded of the action of potassium iodide in actinomycosis or of arsenic in leukemia and pernicious anemia.

If, however, the salicylic-acid preparations are not specific they at least relieve pain and suffering in a majority of cases, and thereby benefit the patient's general condition. This is doubtless advantageous to the end of helping the combat on the side of the systemic resistance to the infection. Of the preparations of salicylic acid I shall say little, but wish to refer especially to the external applications of one form, the salicylate of methyl or oil of wintergreen. The sodium salt is probably most frequently employed for internal use, and, excepting in rare instances when some other form is more acceptable to the stomach, proves satisfactory if the internal administration of salicylates is likely to be beneficial in any form. The Germans advise large doses, and, though these may cause toxic symptoms, I have found them more satisfactory than small doses spread over a longer time. If salicylic acid is likely to prove useful it will do so in a comparatively short time. The administration of a dose of ten grains of the sodium salt three times daily does not suffice. When this plan has been used the drug has relieved pain scarcely at all and has had no appreciable effect on the course of the disease. From 100 to 150 grains should be given in twenty-four hours for two or three days if symptoms of salicylism have not appeared; after that period the dose may be reduced one-half and after one week's treatment the drug may often be discontinued. Persistent use of the remedy undoubtedly causes depression and other complications. The same general principles apply to the internal use of oil of gaultheria, salicin, ammonium and strontium salicylate, etc.

The simultaneous or separate use of salicylate of methyl, applied to the skin in the form of a ten-per-cent. or twenty-per-cent. ointment and covered with lint and oiled silk, is extremely satisfactory. I have repeatedly tested the pain-allaying power of such local treatment comparing it with simultaneous applications of lead-water and laudanum, Fuller's lotion and the like. Invariably the ointment has given the greater relief and the systemic action of the drug was undoubtedly exercised. as abundance of salicyluric acid in the urine indicated the absorption of the drug.

The relief of pain secured by the internal and external use of salicylates is beneficial in several ways, the chief of which is that such freedom from pain causes rest of the diseased parts by relaxing muscular spasm and at the same time improves the general condition of the patient. Some rest may, however, be obtained in another and better way, *viz.*, by the use of splints or plaster casts. For several years past I have treated cases of acute rheumatism in this way. My first experiences were with cases of gonorrheal rheumatism, but more recently I have practised plaster-fixation in cases of ordinary poly-articular rheumatism. The plaster cast almost invariably relieves pain by reducing the muscular spasm and securing immobility and its application is generally followed by rapid subsidence of the local signs of inflammation. The process of applying the cast has never been so painful to the patient that it had to be abandoned. There has never been any increase of swelling after the cast was applied and it has not, therefore, been necessary in any case to remove the cast on account of pressure. On the contrary, it has often happened that a new cast was needed in two or three days on account of the reduction in the size of the joint. In very acute inflammatory cases I have in the beginning covered the joint with lint on which salicylate of methyl ointment was spread and have then fixed the part with a light cast, removing this in twenty-four or forty-eight hours. The ointment may cause irritation if it is allowed to remain too long in close apposition with the skin. In a few instances of rather subacute character it has proved useful to cut the cast so that daily dressings might be applied to the joint. In none of my cases has it been necessary to continue fixation so long that there has been any danger of ankylosis. As soon as the inflammation has measureably subsided it is advisable to discontinue the cast and in but few instances has the condition relapsed so as to require reapplication of the plaster dress-

ing. Occasionally I have allowed the cast to remain for considerable periods, removing it from time to time to examine the joint or practise gentle manipulations.

My experience with this treatment has been confined to gonorrheal rheumatism and polyarticular rheumatism. In the former affection it has long been used by the profession and little need be said at this time. In one very marked case which I saw in consultation with Dr. L. M. Allen, a cast was applied by the attending physician when I had so little hope of its usefulness that I had advised other treatment. The beneficial effects of the fixation were immediate and marked and the patient recovered completely in a surprisingly short time. When I saw him the disorganization of the joint and the involvement of surrounding tissues appeared so great that it seemed wiser to trust to local counterirritation and general internal treatment. The fortunate result, however, disproved this opinion. In other cases of gonorrheal rheumatism equally satisfactory results have been reached, though less promptly.

In polyarticular rheumatism the fixation method has been most useful when the knee, elbow, and ankles have been the affected joints. The wrists and smaller joints can be managed with splints and in other ways quite as satisfactorily and with less trouble. In one case of a relapsing character, both before and after fixation, the cast had little apparent effect in the direction of reducing the duration of the disease, though it undoubtedly relieved pain. In all of the others the duration of the disease was seemingly reduced.

It is well recognized that some cases of polyarticular rheumatism prove stubborn and do not yield to treatment with salicylic acid combined with rest. In the same cases the general condition of the patient is often unsatisfactory and it is advised to discontinue salicylates and to resort to general tonics. This advice is undoubtedly based upon sound principles, inasmuch as the cure of the disease depends upon the general vitality rather than upon the use of any special remedy. In a number of cases of this sort I have employed bichloride of mercury in small doses with good effect, and have been led to attribute the result to a tonic influence of the drug, as I have in cases of secondary anemia of various sorts found this remedy undoubtedly efficacious when administered continuously for long periods of time in doses of from grain 1/96 to grain 1/72. The remedy seems to be of value as a tonic or stimulant of hemogenesis and not as an antiseptic. As far as its application in rheumatism is concerned, I have found it useful only in subacute cases with little local inflammation and with general systemic depression. Other tonics may be valuable, but none of them has seemed to be of especial use in my experience. Sometimes the general condition of the patient has been favorably influenced by the administration of iron, strychnine, and cod-liver oil, but none of these has seemed to exercise the beneficial effect that has followed the use of bichloride of mercury. The iodides are of undoubted value in the more chronic cases; but I have little experience, and none favorable, of their use in subacute cases.

I do not mention the older alkaline treatment, because I have not found it of value.

Finally, I wish to refer to serum treatment. A number of investigations of the value of serum from convalescents have been published, but thus far no useful results have been obtained. It has occurred to me that an antistaphylococcus serum might be useful if staphylococci play the part in etiology that many believe. A difficulty in the way of following out this thought is the unreliability of the preparations that have thus far been made. My own attempts at obtaining an antistaphylococcus serum have been futile, and I therefore made a few trials of antistreptococcus serum, in the hope that its general antibacterial properties (as contrasted with the specific antistreptococcic action) might prove useful in rheumatism. The three cases in which I employed this preparation were instances of obstinate rheumatism that had not yielded to other treatment. In each of them improvement soon followed the injections. The dose of serum injected was one-third of the customary dose used in streptococcus infection, and the remedy was administered every other day for a period of a week or more, when ordinary treatment was resumed. It would be rash to draw conclusions from so limited an experience, but as far as my trials went there was every encouragement to continue the treatment in suitable cases.

REPORT OF TWO CASES OF SPORADIC OR FAMILY TRICHINOSIS; WITH REMARKS ON THE IMPORTANCE OF EOSINOPHILIA IN THE PERIPHERAL CIRCULATION AS AN AID TO DIAGNOSIS.[1]

BY HERMON C. GORDINIER, M.D.,
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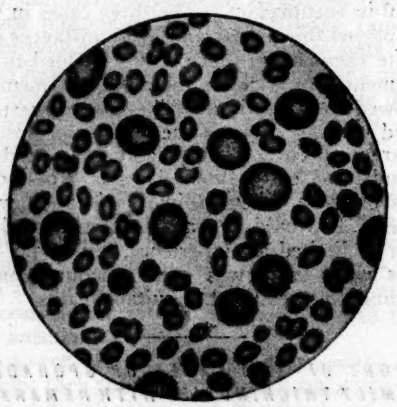
ALTHOUGH trichinæ have often been observed since their recognition by Sir James Paget and Owen in 1835 in the muscles, either in their encysted or larval state, they were considered as pathological curiosities to be found at the autopsy-table only. It remained for Prof. Zenker, the eminent pathologist of Erlangen, then of Dresden, to associate for the first time the clinical symptoms of a grave and fatal case with the presence in the muscles and alimentary canal of numerous living trichinæ.

His case, in abstract, was as follows: A girl, aged twenty years, was admitted to the General Hospital of Dresden on January 12, 1860. She had been ill since Christmas and at the beginning of the New Year had to go to bed. She com-

[1] Read at the annual meeting of the New York State Medical Association, 1900.

plained of lassitude, insomnia, anorexia, constipation, thirst and fever. The fever at the onset was quite high, the abdomen was considerably distended and tender. The spleen was not palpable and rose-spots were absent. The diagnosis of typhoid fever, however, was made. Very soon there occurred much pain in the muscles, especially those of the extremities, which continued day and night. The arms and legs were flexed and could not be extended without the production of great pain. Edema of the legs was present. The patient developed shortly after a pneumonia of a typhoid type, from which she succumbed on January 27th. The postmortem being held the next day, Prof. Zenker was greatly surprised to find, in the first sections of muscles examined microscopically, numerous non-encapsulated trichinæ in and between the muscle fibers. A more thorough search showed the muscles to be literally swarming with trichinæ. Peyer's patches were found normal. Prof. Zenker also found living adult

FIG. 1.



Eosinophilia in Trichinosis.

trichinæ in the intestines, and was able to find trichinæ in the flesh of the animal, some of which had been eaten by this unfortunate girl. As numerous individuals had partaken of the flesh of this same carcass several cases of trichinosis were treated by him. This important contribution to medicine of the discovery of a severe and fatal case of trichinosis was heralded throughout the world and soon much confirmatory evidence was forthcoming of its great value. Since then over a hundred epidemics of trichinosis have been recorded from North Germany alone, with similar records from this and other countries.

The fact that sporadic cases of trichinosis are commonly overlooked is well illustrated by the remarks of Prof. Osler in his article on the clinical features of this disease, in which he says: "Until quite recently I have had no clinical experience with this disease, having seen to recognize but one case in Traube's clinic in Berlin in 1873. The probability is, of course, that in a hospital service of more than twenty years I have frequently overlooked cases just as might have been done in three or four of the cases here reported." These remarks of Prof. Osler may, I believe, with propriety, be applied to most of us. We doubtless have seen, in times past, cases of sporadic or family trichinosis which we have diagnosed and treated as cases of rheumatism, *la grippe* or typhoid fever; trichinosis bearing more than a superficial resemblance to all these diseases.

Owing to the careful observations of Dr. Thomas R. Brown, of Johns Hopkins Hospital, who declares that in trichinosis there is an enormous increase of the eosinophiles in the blood, we now possess a very simple means of diagnosis which will enable us in most if not all instances to recognize this hitherto obscure disease. Dr. Brown's first contribution on this subject was published in the *Bulletin of the Johns Hopkins Hospital*, April, 1897, entitled "Studies in Trichinosis." Here he reports his observation of the condition of the blood in his first case of trichinosis. He found a gradual rise in the proportion of eosinophiles, reaching 68.2 per cent., 35 per cent. higher than any previous record, and from this point a gradual decline to 16.8 per cent. on the patient's discharge. There was a coincident depression of the polymorphonuclear neutrophiles, reaching one time 6.6 per cent., while for two weeks these forms showed an absolute decrease in the blood, notwithstanding the marked leucocytosis reaching on some occasions about 30,000 per cubic millimeter. Dr. Brown's second contribution to this subject appeared in the *Journal for Experimental Medicine*, Vol. III., No. 3, 1898, entitled "Studies in Trichinosis with Especial Reference to the Increase of Eosinophiles in the Blood and Muscles, the Origin of These Cells and Their Diagnostic Importance." Here he reports, in full, his first case together with two new ones, and from the study of the blood draws the following conclusions: (1) That there is a marked increase in the percentage of eosinophilic cells in the blood in trichinosis. (2) That this increase may be used as a diagnostic sign in this disease. (3) That this disease in its sporadic form is more common than has hitherto been supposed, as shown by the discovery of the three cases above described within a comparatively short time at the Johns Hopkins Hospital. (4) That a systematic examination of the blood should be undertaken in cases with indefinite intestinal, muscular, or articular symptoms, in hope that in some, at least, of the hitherto doubtful cases a diagnosis may be reached.

The discovery by Dr. Brown of the presence in trichinosis of an eosinophilia of a higher grade than any other known condition is one of the most valuable contributions to medical science, being second only in importance to that of Zenker. The observations of Brown have been recently verified by Cabot, Gwyn, Atkinson, Stump, Blumer and Newman. In Cabot's case a differential count of the leucocytes showed 27

per cent. of eosinophiles. In the case of Gwyn the percentage of eosinophiles was between 33 per cent. and 66 per cent. In Atkinson's case it reached 8 per cent. and in the case of Stump 52 per cent. of eosinophiles were found. In each of the nine cases reported by Drs. Blumer and Newman, the highest percentage of eosinophiles was, respectively, 40.6 per cent., 41.5 per cent., 36 per cent., 33 per cent., 33.6 per cent., 46 per cent., 39.4 per cent., 50.4 per cent. and 20 per cent.

The histories of my own cases are as follows:

Case I.—Sidney V., thirteen years of age, entered the Sanitarium Hospital November 8, 1899. His family and personal history is of no especial interest in relation to his present condition. This began about November 1, 1899, when he noticed that his face was swollen and that he had pains in his eyeballs. He became breathless on exertion and his feet felt heavy and swollen. He was feverish and chilly and had lost all desire for food. Could elicit no history of any gastro-intestinal disturbance. He stated he had eaten, during the past six months, quantities of "blutwurst" and that his father and brother had also eaten the same and that they had suffered with pains and soreness of muscles of arms and legs.

Present condition.—Patient's height, five feet; weight, 100 pounds. He appears very anemic. The face, especially about upper and lower eyelids and over malar prominences, distinctly swollen. Tongue heavily coated, mucous surfaces pale, no stiffness or tenderness of tongue. Larynx not at all tender on manipulation. Slight tenderness of bodies of biceps and calf muscles. Muscular movements were not attended by soreness. Nerve-trunks not tender. No tenderness of bones or joints. Slight puffiness over tibia. Heart's apex in normal position, sounds normal, no adventitious sounds. Lungs negative. Liver dulness normal. Spleen not enlarged. Abdomen not tympanitic or tender. No rose-spots. On part of the nervous system nothing was found abnormal save slight diminution of the patellar tendon reflexes. Pulse regular, full rate 110. Temperature 102° F. Urine (twenty-four-hour specimen) light amber; sp. gr. 1008; alkaline in reaction; 480 grs. of urea per twenty-four hours; no albumin, sugar, casts, blood or pus. Diazo-reaction distinct.

Before entering the hospital the patient had been treated at another institution where the diagnosis of heart-disease with dropsy was made. My attention was directed to the patient through the courtesy of my colleague, Dr. James P. Marsh, in whose service he was, and who had made no diagnosis, but recognized the fact that he had never before seen a similar case. The peculiar location of the swelling about the face and especially the eyelids; the slight muscle tenderness; the entire absence of signs of disease in any of the organs, together with the history of having eaten, over a long period, "blutwurst," consisting as it does of coagulated blood with small chunks of pork, brought to mind at once the fact that we probably had to deal with a case of sporadic or family trichinosis. I suggested an immediate microscopic examination of the blood, which was carried out by Dr. E. W. Becker, the house physician. He found an enormous increase of eosinophiles, these being easily recognized at a glance beneath the microscope, in freshly-drawn blood. A careful differential count was then made of 1000 leucocytes after having been stained with Ehrlich's triacid mixture with the following result: Eosinophiles, 773; small lymphocytes, 124; large lymphocytes and transitionals, 49; polymorphonuclear leucocytes, 54; hemoglobin, 65 per cent. This was truly an enormous increase of the eosinophiles, there being 77 per cent. together with a remarkable decrease of the polymorphonuclear leucocytes. For the purpose of confirming the diagnosis, Dr. E. D. Ferguson removed some muscular tissue from the biceps of the left arm and right gastrocnemius muscles. The tissue was examined in the fresh state, after having been teased, without finding trichinæ. Their workings were evident, however, as several granular areas were seen together with longitudinal and transverse splitting of the muscle fibers. The remainder of the muscle tissue was sectioned after hardening in absolute alcohol and imbedded in celloidin. It was stained with hematoxylin and eosin. In several sections non-encapsulated trichinæ were found lying coiled up in characteristic granular areas of myositis. Many muscle fibers were found split both transversely and longitudinally. The connective tissue between the primitive muscle bundles was slightly increased. All these changes were marked only in close proximity to the position of the areas of granular degeneration. Differential blood-count November 28, 1899: Eosinophiles, 52.6 per cent.; polynuclear leucocytes, 36.6 per cent.; large mononuclear leucocytes, 1.9 per cent.; small mononuclear leucocytes, 7.7 per cent.

Case II.—W. W., forty-two years old, the father of the former case, came into the Sanitarium Hospital November 14, 1900. He was a painter by occupation. Never had been ill since childhood save eight years ago when he had an attack of painter's colic. Since early spring in common with his son, he has been eating large quantities of "blutwurst." Three months ago he was taken ill with chills, fever, cramps in stomach, severe headache and pains and aches all over the body. He consulted a physician who told him that he had malarial fever and treated him for several days. In a short time diarrhea supervened and has continued ever since. The pains and soreness in the muscles of the arms and legs have remained until the present time, although much less in intensity than at first. He complains of the muscles being tender, especially those of arms and the hamstrings of legs. These muscles frequently cramp, after which the arms and legs feel numb. The patient was a moder-

ately well-nourished man, 5 feet 6 inches in height and weighed 150 pounds, and walked unassisted to the hospital. His face was slightly swollen about the malar eminences, but no edema about eyes existed. His tongue was coated and his breath very foul. He was pale but much less so than his son. There was no swelling of the legs. The biceps, hamstrings, and calf muscles were quite tender, especially at the junction of the tendons with the bodies of the muscles. No nerve tenderness existed. No evidence of wrist drop. Reflexes normal. Movements of joints unattended with pain. When patient first became indisposed muscular movement created great pain. Examination of the thoracic and abdominal organs elicited nothing abnormal. Urinary examination negative. No diazo-reaction. Pulse 126, regular, full and strong. Temperature 99.6° F.

Examination of freshly-drawn blood showed a marked eosinophilia which evidently was not so great as in the first case. Differential count of 500 leucocytes gave the following result: Polymorphonuclear, 49 per cent.; small mononuclear, 18 per cent.; large mononuclear, 1.8 per cent.; and eosinophiles, 31.9 per cent. November 22, 1899, Dr. Ferguson excised a small portion of the right biceps muscle. Sections of this were examined in the usual manner, but without trichinæ being discovered, although a few granular areas of myositis were found.

Case I. is very interesting because of the entire absence of gastro-intestinal symptoms, such as vomiting, colic or diarrhea, and of great muscular pains. The only severe pains from which he suffered were those provoked by movements of the eyeballs. But one characteristic objective symptom was present, namely, swelling of the face and about eyes and over region of tibiæ. The case certainly was atypical and its true nature was only disclosed by a study of the blood which showed an enormous eosinophilia with a corresponding reduction of the polymorphonuclear neutrophiles. This led to the excision of the muscles with, as a reward, the finding of numerous non-encapsulated trichinæ, together with the pathological changes in the muscles excited by their presence.

The clinical history of Case II. was typical of a distinctly mild attack of trichinosis. The recurring chills, the fever, cramps in the stomach with diarrhea followed by severe headache and pains and aches all over the body, with soreness and tenderness of the muscles, all pointed to trichinosis. All of these symptoms, however, could have been easily counterfeited by those of *la grippe*, typhoid fever, or by an erratic type of rheumatism, and this error could have been more easily committed, owing to the general appearance of the patient and from the fact that he did not appear ill and was able to walk round the ward during his short stay in the hospital. But here, again, the blood-examination cleared up all doubt by showing a decided increase of eosinophiles. Although we were unable to find the trichinæ in the muscles, a few sections showed the characteristic changes incident to their presence.

These two cases, then, illustrate very clearly the great assistance rendered by a careful examination of the blood in establishing the diagnosis of trichinosis and are entirely confirmatory of the results of Dr. Brown's painstaking study of the condition of the blood in the peripheral circulation in this disease.

Since the publication or Dr. Brown's original articles, eighteen additional cases of trichinosis have been recorded, making with the two herein reported twenty in all. In nineteen of this number the presumptive diagnosis of trichinosis was made from the presence of marked eosinophilia alone, which diagnosis was subsequently confirmed in all save a few cases by actually finding trichinæ together with their pathological changes incident to their presence in the muscular tissue removed from the patients. In a fatal case reported by Dr. Howard of Cleveland a single examination of the blood disclosed the presence of no eosinophiles, although eosinophiles were found in the muscular tissue after death. It is possible in this case that repeated examinations of the blood might have shown an eosinophilia. It is also possible that in fatal cases of trichinosis shortly before death, a marked diminution or entire absence of eosinophilia in the peripheral circulation occurs. Although eosinophilia occurs in several diseases, notably leukemia, asthma, chronic eczema, pemphigus, prurigo, psoriasis and in individuals affected with some forms of intestinal parasites; it does not occur in any disease the symptoms of which resemble trichinosis. It is therefore very important that a systematic blood-examination be made in all doubtful cases.

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THE SURGERY OF THE GASSERIAN GANGLION.[1]

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THERE is no more painful and distressing malady than trigeminal neuralgia, nor a more difficult and dangerous operation in surgery than extirpation of the Gasserian ganglion, which has been so successfully performed for its relief.

[1] Read before the Southern Surgical and Gynecological Association, Atlanta, Ga., November 15, 1900.

Neuralgia of the fifth nerve, variously described as trifacial, trigeminal, tic douloureux, prosopalgia, etc., is more frequent than all other forms of neuralgia, and has been recognized and treated in a variety of ways for centuries.

The *Lancet* (1829, p. 367) gives an interesting account of the discovery of notes and memoranda which were presented by Lord King to Dr. Clarke, at the College of Physicians, London, June 1, 1829, showing that John Locke was a physician, as well as a philosopher. The notes referred to his diagnosis and treatment of the case of the wife of the English Ambassador at Paris in December, 1677. He described with great accuracy the symptoms of tic douloureux, with reflections as to its cause, and the best method of treating it.

Neurotomy, for relief of facial neuralgia, is not a modern operation. It was first suggested by Albinus and Galen, and it was employed by Marechal, surgeon to Louis XIV., as early as the middle of the eighteenth century.

In 1798 John Haighton published an account of a successful operation for neuralgia of the face by section of the affected (infra-orbital) nerve. The operation was so frequently employed after this that it fell into disrepute. It was revived again about 1852 by Roux and others (Treves' Manual of Operative Surgery). Nerve-stretching succeeded neurotomy, and later neurectomy came into vogue. Horsley (*Brit. Med. Jour.*, Nov., 1891) mentions another method, the thrusting of a red hot wire into the foramen of exit, but this never came into general use. Nussbaum introduced ligation of the internal carotid, but this was soon abandoned.

In 1858 Carnochan of New York advised the removal of Meckel's ganglion, and the trunk of the nerve at its exit from the foramen. He reached the ganglion through the antrum. There have been many modifications of this operation, but they are all practically Carnochan's method. Leucke of Strassburg removed Meckel's ganglion by resecting the zygomatic arch, and turning it upward with the fascia attached, and thus reached the pterygoid fossa and resected the nerve and ganglion. Great deformity was the result, so Lossen of Heidelberg turned the flap downward instead of upward.

Horsley elevated the eye from the floor of the orbit, opened the infra-orbital canal, and followed the course of the nerve until he could divide it at its exit from the foramen rotundum. In 1872 Pancoast resected the inferior division of the nerve at its exit from the foramen ovale. Kroenlein resected the inferior and middle branches of the nerves as they emerged from the skull. The operations from the outside of the skull proving unsatisfactory, J. Ewing Mears (*Trans. Am. Surg. Assoc.*, 1884) proposed an intracranial operation, and removal of the Gasserian ganglion. Rose of London (*Lancet*, Nov. 1, 1890) made the first extirpation of the Gasserian ganglion on April 2, 1890. About the same time Andrews of Chicago made the operation also. Rose being the first to publish his results, the operation became known by his name. They both reached the ganglion by trephining the base of the skull in the pterygoid fossa, in front and at the outer side of the foramen ovale. The zygomatic arch was resected and turned upward, the coronoid process was divided and turned forward with the temporal muscle.

The Hartley-Krause method succeeded this and was described about the same time by Hartley in New York, and Krause in Germany. The time and method of both operators was so nearly identical that it has received the name of both. Hartley's first operation was made August 15, 1891 (*N. Y. Med. Jour.*, March 19, 1892) and Krause's February 23, 1892 (Die Neuralgie des Trigeminus). The operation consists in raising an omega-shaped osteoplastic flap from the temporal fossa. The only difference in the two methods being that Hartley used a chisel to raise the flap, and Krause an electric saw. The Hartley-Krause method, with or without modifications, is the one now employed by most operators.

To the brilliant operations and able writings of Tiffany,[1] Keen,[2] Spiller,[3] Carson,[4] Abbe,[5] Murphy,[6] Cushing,[7] Dana,[8] and Beck,[9] we owe in a large measure our present knowledge of this disease, and the best methods devised for its relief; and to them the writer is chiefly indebted for the information contained in this paper.

Anatomy.—In order to properly appreciate this affection, and the hazardous nature of the surgical intervention necessary to effect a cure, it might be well to briefly consider the anatomy of the region involved. The fifth nerve emerges from the brain with two roots. The posterior root, consisting of about a hundred bundles of nerve fibers and stronger than the other, is first visible in the groove of the crus cerebelli ad pontem. Its fibers are sensory. The anterior root is thinner, and covered by the posterior. It emerges from the gray nucleus of the fourth ventricle, and is first visible coming from the front portion of the pons Varolii. Its fibers are motor. These two nerves join, and, perforating the dura mater, their course leads toward a shallow depression in the petrous portion of the temporal bone called Meckel's cave. There the posterior sensitive root develops into a ganglion. Its fibers spread and ganglionary cells develop into a flat, oblong body, known as the Gasserian ganglion. Motor fibers have no part in this formation. From the convex border of the ganglion three nerves emerge, the ophthalmic, superior maxillary and inferior maxillary. There are very important structures in the immediate vicinity, the internal carotid, middle meningeal, and cavernous sinus.

The nerves leave the cranial cavity by different openings, the supra-orbital fissure, and the foramina rotundum and ovale, where the third branch is joined by the motor fibers of the anterior root. The object of the surgeon is to remove the sensory portion of the nerve and to leave the motor. This is very difficult, as they are close together, and deeply situated.

Etiology.—Victor Horsley gives as the causes of trigeminal neuralgia (1) cold; (2) worry and overwork; (3) alcohol; (4) ostitis of the alveolar borders of the jaws due to dental caries; (5) rhinitis; (6) traumatism. Authorities differ as to whether the disease is of central, or peripheral origin, but the consensus of opinion is that it is peripheral. It occurs in the majority of cases about middle life, or later, and is due to degenerative change in the nerve and its ganglion, and probably in the blood-vessels supplying it. It attacks women twice as often as men. It seldom attacks men under forty, and is three or four times more frequent in women than men under forty. Heredity is of little importance. In about one-fourth of the cases there is a history of migraine, but the most common exciting causes are cold, worry and overwork. The disease begins as a trigeminal neuritis, with herpes, associated often with disease of the gums and teeth. In a great majority of the cases, it is the second or third branch that is involved. It rarely begins in the ophthalmic, or remains localized in that branch, while it often affects the second and third branches for a long time. Dana (*Jour. Am. Med. Assoc.*, May 5, 1900, p. 1100) divides the disease into two types: (1) The migrainous type of early life. A disorder of the central sensory neuron, which may later develop into a true degenerative neuralgia. (2) The more common form, occurring after forty. A true infective neuritis, due to some local disease of the gums, or osseous tissues.

Pathology. — The following degenerative changes were found on microscopical examination by W. G. Spiller in two cases operated on by Cushing and illustrate the pathological condition that usually exists (*Jour. Am. Med. Assoc.*, May 5, 1900, p. 1094): (1) Tumefaction of the medullary sheaths, and axis cylinder, in certain bundles only, in all three divisions of the ganglion. (2) Tumefaction of the axis cylinder in a portion of the sensory root. (3) Numerous spaces in a portion of the sensory root, possibly resulting in part from degeneration of nerve fibers. The sensory root was not normal and a return of the pain was possible. (4) Intense degeneration in the center and peripheral end of the ganglion, and its peripheral divisions.

The blood-vessels were not distinctly diseased, and there was no evidence that the condition of the nerve fibers was due to vascular degeneration. The nerve-cells offered no evidence of the cellular origin of tic douloureux.

Diagnosis.—The fearful and distinctly localized pain renders the diagnosis easy, for as Trousseau (*Clinical Medicine*) describes it, "An individual, who but a moment ago was perfectly free from pain, is suddenly seized with horrible pain while talking. He puts his hands to his face and presses it with considerable force, sometimes rubbing it so much and so often that the hair on that side falls off. He goes on rocking himself, holding his head between his hands and uttering half-suppressed groans. This lasts for ten or fifteen seconds, one minute at most, and all is over without convulsions." The pain is so excruciating that the victims of it will readily consent to any operation, and are heedless of its danger, preferring death, often contemplating, and sometimes committing suicide to escape it. A patient of Murphy's expressed it most forcibly when he said, when told of the risks of an operation, "Anything you can get out of this better than death is clear profit."

Treatment.

Medical.—No permanent good has ever been accomplished by narcotic drugs. In the early stages of the disease, during the first or second year, heroic doses of strychnine often arrest and control it. In cases that have existed over six or seven years, a remission may occur, but no lasting benefit is obtained. Electricity sometimes palliates, but seldom cures.

Surgical.—A variety of operations have been devised, developing gradually from the simplest to the most intricate and dangerous. (1) The nerves were cut (neurotomy). (2) Portions were excised (neurectomy). (3) They were pulled and twisted out of their bony canals (neurexeresis). (4) Nerves were divided close to their central origin. (5) Extirpation of the Gasserian ganglion.

Simple section of the nerve gives immediate and magical relief, but the result is temporary, owing to the reunion of the nerve-channels by reparative action. If the lesion is central, a superficial operation is useless. If it is peripheral, it is necessary to remove enough to prevent bridging of the gap. The value of resection, therefore, depends upon the amount of nerve removed. Unless the duration of the disease is such that there is little doubt that the ganglion is involved, a peripheral operation should always first be made. If, however, there is recurrence of the pain after one or more peripheral operations, the more radical operation of removal of the Gasserian ganglion is necessary to effect a cure.

Tiffany (*Trans. Am. Surg. Assoc.*, Vol. XIV., 1896) offers the following suggestions for deciding when an intracranial operation should be made: "(1) *Intracranial operation to be thought of* (*a*) If more than one branch is affected. (*b*) If the painful area receives filaments from the branches near their exit from the head, *e. g.*, tongue, temporal region. (*c*) If the pain is not the expression of constitutional disease. (*d*) If a cause central to the ganglion does not exist. (*e*) If other measures have failed to relieve. (2) The intracranial operation that should be done, is removal of the lower two-thirds of the Gasserian ganglion with the second and third branches, as far as the foramina of exit from the skull, all in one piece, so as to be certain of the amount of tissue taken away. (3) The upper third of the ganglion and first branch may for the present not be excised for neuralgia."

Three routes have been followed in making this operation.

1. *Transmaxillary route* (Rose); removal of the superior maxillary bone. A dangerous method, as the cranial cavity is left in contact with the mouth, and infection is most likely to follow. There is much deformity, and this route has been practically abandoned.

2. *Pterygoid route* (Rose and Andrews); exposure of the foramen ovale by temporary resection of the zygomatic arch and coronoid process of the inferior maxillary. This route is difficult and dangerous, although not opening into the cavity of the mouth. The wound leaves much disfigurement. There may be necrosis of the zygoma, and the coronoid process may be lost. There is often severe hemorrhage from the internal maxillary artery, and the pterygoid plexus of veins. It is difficult to find the foramen ovale, the opening being sometimes hidden by the pterygoid spinous ridge. In trephining, the Eustachian tube may be opened and septic infection result. The dura mater may be opened, and the internal carotid may be damaged. The ganglion cannot be clearly exposed, and frequently only fragments are removed.

3. *Temporal route* (Hartley-Krause); this is the best route and the one followed by most operators with or without modifications. The advantages are a short incision, with little division of the muscle, and a cicatrix which is hidden by the scalp. The ganglion can be exposed with slight risk of opening the subarachnoid space. The squamous portion of the temporal bone is the only portion of the skull divided. There is no danger of communicating with the Eustachian tube and pharynx.

The principal difficulty and greatest danger is due to hemorrhage. The middle meningeal artery is often lacerated, necessitating much delay in reaching the seat of operation, frequently requiring packing, and a postponement of the operation. In order to reach the ganglion, it is necessary to elevate the brain and dura, so that it is often impossible to preserve the artery at the foramen spinosum. Krause advocates the double ligation of the vessel after it emerges from this foramen. This is difficult and often unsuccessful. The high temporal route is attended by many difficulties, which have been obviated to a great extent by Cushing's (*Jour. Am. Med. Assoc.*, April 28, 1900, p. 1038) modification of the Hartley-Krause operation, from which it differs only in detail. He calls it the "Direct Infra-Arterial Method." "The trephine opening through the fossa temporalis is sufficiently low, so that the extradural manipulations may be conducted *underneath the arch made by the middle meningeal artery*, which is retracted with the dura, and yet remains uninjured at its two fixed points, namely, at the foramen spinosum of the temporal bone, and the sulcus arteriosus of the parietal. Under this arch, with but slight elevation of the temporal lobe, the entire ganglion and its sensory root may be exposed. This method gives the maximum of exposure, with the minimum of cerebral compression, and injury of the blood vessels." The steps in the operation are as follows:

1. *Formation of Muscle Flap and Exposure of Temporal Fossa.*—A horseshoe-shaped skin incision is made in the temporal region, its base about 4 cm. in breadth, corresponding to the zygomatic arch, and its convexity reaching about 5 cm. above it, but slightly higher than the pinna of the ear. The incision is lower and smaller than the Wagner osteoplastic procedure as adopted by Hartley and Krause. This skin flap is turned downward, some branches of the temporal artery being divided, the underlying temporal fascia is exposed well on to its attachments to the zygomatic arch, and the posterior, or temporal border of the malar bone. An incision is then made through the temporal fascia concentric with and just inside of the skin incision, and at the base of the skin flap it is carried along the middle of the outer surface of the zygomatic arch, through the periosteum down to the bone. The periosteum is then elevated from the bony arch, leaving the masseteric attachment at its lower edge uninjured, and the zygomatic processes of the malar and temporal bones are divided with heavy forceps. An incision concentric with the skin incision is then carried down through the temporal muscle, and the muscle is scraped away from the bony wall of the temporal fossa, to which it has no attachment in this situation, and retracted downward together with the resected portion of the zygoma, and into the space which this bony arch formerly occupied. In this way the lower portion of the temporal fossa, as far down as the attachment of the external pterygoid muscle, below the infratemporal crest is well exposed.

2. *Exposure and Elevation of Dura as far as the Ganglionic Sheath.*—With mallet and gouge a small opening is made through the most prominent portion of the exposed great wing of the sphenoid, enlarged with rongeur forceps to a diameter of about 3 cm., its lower margin carried well down, and including the ridge between the temporal and zygomatic fossa—the crista infratemporalis. The uninjured middle meningeal artery runs on the dura thus exposed, across the opening in the bone as the diameter of its circle. The dura with this vessel may then be lifted almost bloodlessly from the base of the middle fossa until the first point of firm dural attachment of the foramen ovale is reached.

3. *Elevation of Dura With Meningeal Artery and Exposure of Upper Surface of Ganglion.*—By careful blunt dissection, and by working at the dural attachment about the foramen rotundum, and in the line between this point and the foramen ovale, where it is again firmly attached, the edge of the dural envelope which encloses the ganglion and its peripheral ultra-cranial branches may be split, and by careful elevation the entire upper surface of the stellate structure exposed well back on to the sensory root, the ganglion being left in its bed still adherent in the underlying portion of the envelope.

4. *Liberation and Extraction of the Ganglion and Its Branches.*—After the exposure of the upper surface of the ganglion and before division of any of the peripheral branches, these three nerves with the ganglion and trigeminal root should be liberated from the attachments to the base. This is readily accomplished by working with the blunt dissector in the crotches between the second and third divisions, and also along each side of the nerves. After the ganglion and the second and third have been liberated, and can be lifted up by the dissector, it is necessary to free the superior and internal edge of the trigeminal root and first division. These manipulations should be conducted as near as possible to the sensory root, since that is the safest point, and one at which there is less likelihood of injuring the cavernous sinus and sixth nerve. The ganglionic structure may thus be completely obliterated, without division, or laceration of a single branch. With a pair of hemostatic forceps (Kocher's) the structure may then be grasped first back of the site of the true ganglion on the trigeminal root; the three peripheral divisions are in turn held up with a blunt nerve hook and divided with scissors close to their foramina; the sensory root is then evulsed by means of the previously attached pair of forceps.

5. *Closure and Dressing.*—The zygoma and flap of the skin, muscle and fascia are replaced. The resected portion of the zygomatic arch is replaced, and remains in position without wiring, as the masseter is paralyzed. The temporal muscle and fascia are secured in place by fine interrupted sutures at the upper curve of the incision, and a few sutures are taken in the divided periosteum and fascia over the replaced zygomatic arch. In applying the dressing the eye is covered by a large sheet of rubber protective, which bridges across from the nose and forehead to the malar prominence of the cheek, and prevents the pressure of the bandage against the eye. Drainage is not employed. Primary union occurred in all cases, and the resulting scars were very slight. He has not found it necessary to suture the lids, and thinks the local reaction resultant to this procedure would be detrimental in case there was an ensuing keratitis, which is at times unavoidable. The simple protective dressing keeps the eye moist, protects it from dust, and the patients may dimly see through the covering. A Buller shield answers the same purpose.

Prognosis.

1. *The immediate result* of an operation is either relief or death. The relief may be partial or complete. If the entire second and third divisions and their respective portions of the ganglion have been removed, complete immunity will result. If the ganglion has only been partially removed, recurrence will follow.

Death may occur as an immediate result in several ways: (1) Shock, due to loss of blood usually. The use of saline infusion renders this unlikely. (2) Hemorrhage, which it is impossible to control. (3) Sepsis, with meningitis, due to lack of surgical cleanliness.

2. *Remote results* are: (*a*) Recurrence due to an incomplete operation. (*b*) Destruction of the eye due to failure to properly protect it. (*c*) Paralysis of the muscles of mastication, due to removal of the motor portion of the third division. This is grave only when the condition is bilateral. (*d*) Abscess of the brain due to rough handling during the operation.

Mortality.—Tiffany's table of 108 cases (to May, 1896) gives a mortality of 22.2 per cent. According to Carson's table of 100 additional cases (to March 25, 1899) the mortality was 11 per cent., a reduction of one-half (*Med. Rec.*, St. Louis, 1899, XXXIX.). Victor Horsley recently reported 21 cases with two deaths (*Practitioner*, Sept., 1900).

Conclusions.

1. Trigeminal neuralgia is an ascending neuritis, peripheral in origin. The second and third branches, rather than the first, are the ones most likely to be involved.

2. If the disease persists after several months' trial with drugs, electricity, etc., surgical intervention is indicated.

3. If only one branch is involved and the disease is not of long standing, as much as possible of the affected branch should be removed with a view of relieving pain and preventing the upward progress of the disease.

4. If more than one branch is involved, and the pain is severe and has persisted for a long time, the ganglion should be extirpated, all other means having failed.

5. The temporal route should be followed, the Hartley-Krause, or preferably, Cushing's modification of it, being the most rational procedure.

6. Pain will not recur with original severity in more than one or two per cent. of the cases operated upon, or in any degree in more than four or five per cent., and is invariably due to an incomplete operation.

7. It is important to remove the ganglion and its branches intact in order to be certain of the completeness of the operation and to insure a careful and thorough microscopical examination of the specimen.

8. The present mortality is about ten per cent. Increased experience and an improved technic will undoubtedly diminish this mortality, and dissipate the risks of this hitherto most formidable, difficult and dangerous operation.

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THE TREATMENT OF BRONCHITIS IN INFANTS AND YOUNG CHILDREN.

BY SAMUEL S. ADAMS, M.D.,
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THE treatment of bronchitis in infants and young children is so dependent for its success upon the etiology that a few preliminary thoughts seem warranted. Indeed, bronchitis has so many causes and is so frequently the accompaniment of some other pathologic condition that one often is perplexed as to the direction of the application of measures for its relief. It is one of the most frequent diseases and is probably produced by a greater number and variety of causes than any other disease of early life.

It may be primary or secondary. Primary bronchitis may be excited by cold, sudden changes of temperature, exposure to high winds, or great atmospheric humidity, or it may result from the extension of the catarrhal process from the upper air-passages; and it is also common in children suffering from rickets, anemia and malnutrition. In rare instances it is caused by the inhalation of irritating gases and vapors. It may accompany any of the acute infectious diseases; it is invariably present in measles and influenza, common in whooping-cough, scarlet fever and typhoid fever and infrequent in chickenpox and rötheln.

It may also be caused by microbial irritants. It is true that in health pathogenic micro-organisms are suspended in the secretions of the nose and nasopharynx and seldom pass beyond the large bronchi. In bronchitis, however, the ciliated epithelium of the bronchi is destroyed, thus diminishing the resistance to the invasion of such bacteria, so that various pathogenic micro-organisms have been found in the pulmonary alveoli. Numerous experiments have shown that pulmonary tuberculosis can be induced by causing an animal to inspire air charged with tubercle bacilli. If this particular bacillus will invade and infect the air-vesicles, it is not unreasonable to suspect the presence of less virulent organisms in the bronchi and bronchioles.

Although usually sporadic, bronchitis may become epidemic by being transmitted from one child to another by personal contact or through the medium of school-books, pencils, chewing-gum, clothing or, most frequently, by the promiscuous use of the handkerchief. Bronchitis is much more serious in young than in older children, the gravity usually lessening with advancing age. It is dangerous in the younger child because of its greater tendency to invade the smaller bronchi and air-cells.

In addressing treatment to this disease, we should not be hampered by any routine practice, because failure often comes from methods directed to all cases. The individuality of the child should always stand paramount.

Prophylaxis.—Appreciating the fact that the child has a predisposition to catarrhal conditions in general, or to bronchitis in particular, much can be done to prevent him from having attacks by attention to his personal and domiciliary hygiene. Especially in infants should explicit directions be given as to clothing. Many young children are made susceptible to the influence of cold by wearing unsuitable clothing. The maternal tendency is toward too heavy clothing. In cold weather light flannel underwear should be worn continuously, while the outer clothing should be adapted to the changes of temperature. The child should have a daily bath (80°-90° F.), to be followed by gentle rubbing with a coarse towel. The beneficial effects of daily inunctions of oils are more problematical than real. Such practices not only prevent cutaneous excretions, but also soil the child's clothing and often make an attractive baby repulsive. Weak and delicate children are too often confined to the house. Improvement has been marked by keeping the child out-of-doors most of the day. If the atmosphere is dry and cold, it is wholesome, but when damp it would be better for the child to remain indoors where the temperature of the room should vary between 68°-72° F. The temperature of the sleeping apartments of such children should be about 65° F. at night.

A slight coryza is not sufficient to keep a child indoors in pleasant weather. Cool dry and warm dry air are equally beneficial. If the child has fever, it would be better to keep him in bed and watch him, the object being to prevent the extension downward of an inflammation of the upper air-passages. The average case will usually recover promptly if kept in bed in a room well heated and well ventilated, given a simple, nutritious diet, and a mild cathartic—a dose of castor oil excelling all others.

Attempts to abort bronchitis by a hot footbath, free purging and profuse sweating are seldom successful. Such measures may prove injurious unless extra precautions are taken to prevent the child from taking additional "cold" by kicking off the bed-coverings.

Local measures when judiciously applied are often beneficial. Poultices are objectionable because they must be renewed so frequently that the child's rest is disturbed. The effect of the poultice is derived from a chest-jacket of cotton covered with cheesecloth or oiled silk. In many cases, especially where the heart's action is feeble, counter-irritants applied to the chest relieve pulmonary congestion. The turpentine stupe or, as many prefer, the weak mustard paste, may be placed under the jacket until the skin becomes sufficiently irritated, when it should be removed; it may be reapplied every six or eight hours. Blistering is never necessary.

Inhalations of watery or medicated vapors are valuable in relieving the embarrassed respiration by softening the thick bronchial secretion and in applying the medicament to the inflamed part. For infants and very young children this can be accomplished best by placing them under a tent into which the steam from a boiling kettle can be conducted. Older children will inhale the vapors from any one of the many inhalers offered for

sale in the drug-stores. When neither of these methods is practicable the air of the room can be saturated with moisture by having a kettle or pan of water constantly boiling near the child's bed. The following medicaments may be vaporized: Tincture of benzoin (compound), eucalyptol, carbolic acid, creosote, turpentine and terebene. Direct inhalation should last about ten minutes every hour or two; indirect (*i. e.*, through atmosphere of the room) vaporization may be kept up until the atmosphere of the apartment is saturated with the medicament.

Expectorants are not well borne by infants and much care should be exercised in their selection. In the dry stage of bronchitis small doses of ammonium iodide in an agreeable menstruum, to which a few drops of syrup of ipecac are occasionally added, will usually hasten the secretion, thus relieving the swelling of the mucous membrane, rendering the cough less painful and lessening the frequency of respiration. In older children the same drugs in larger doses are beneficial. When the secretion becomes very profuse, the syrup of hydriodic acid is valuable.

Opiates of every description should be withheld as long as possible from infants; but when the cough is harassing and the sleep disturbed, small doses of codein or a few drops of paregoric every two hours, for a few doses only, are justifiable. The older child is often benefited by a small dose of Dover's powder, or codeine added to a palatable mixture. The practice of adding some form of opium to every so-called "cough mixture," regardless of the age of the child, is fraught with much danger. We can relieve or stop the cough, but by doing so we destroy one of Nature's safeguards by which the secretions are removed and the engorged bronchioles freed.

Emetics are seldom indicated, unless the exudate is so profuse, or the stomach so distended with gas from undigested food as to embarrass respiration. In the very young and feeble either of these conditions may be promptly overcome by an emetic of the syrup or wine of ipecac, which is seldom attended by depressing effects.

Cardiac stimulants are required in most severe cases, especially in the feeble. Alcohol in some form is the best and is well borne by children. In cases in which the heart does not seem strong enough to overcome the intrathoracic engorgement a valuable adjuvant will be found in nitroglycerin, which is most effective when administered hypodermatically. While it is injudicious to begin stimulation too early, it would be equally so to delay it until the heart is too debilitated to respond to the strongest stimulants. In bronchitis, or in pneumonia, the heart's action should be jealously guarded.

Respiratory stimulants of strychnine and atropine are required in a very small percentage of cases. They may bridge over the crisis, but should be watched by the physician, and never entrusted to the discretion of either nurse or layman.

Severe attacks of dyspnea and feeble respirations must be promptly met. The passive pulmonary congestion and the overfilled right heart must be relieved, and the compressed and empty air-vesicles reinflated. All of these indications may be fulfilled by Jacobi's plan of flagellation or spanking, which serves the twofold purpose of causing the infant to cry, which induces full, deep inspirations distending the air-vesicles and reddening the surface, which attracts the blood from the distended intrathoracic blood-vessels. The same results may be obtained by H. C. Wood's method of alternate hot and cold douches to the chest. Much less heroic and probably quite as effective as either of these methods is the general hot bath (110-120° F.). Mustard may be added to the water. Oxygen by inhalation may mitigate the feeling of suffocation, but the relief is only temporary.

The treatment of fibrinous bronchitis is at best unsatisfactory. When the exudate causes attacks of dyspnea, inhalations, as indicated above, may soften the membrane which will be expelled by coughing; but an emetic is sometimes more effective in removing the casts. Between the severe paroxysms potassium iodide and hydriodic acid are useful.

Chronic bronchitis is usually secondary to some debilitating ailment, consequently the indications are to treat the primary disease by improving the patient's general health.

1 Dupont Circle.

CLINICAL MEMORANDUM.

FATAL ANGINA PECTORIS, WITHOUT LESIONS OF THE CORONARY ARTERIES IN A YOUNG MAN.

BY T. E. BULLARD, M.D.,
OF SCHUYLERVILLE, N. Y.;
WITH DESCRIPTION OF THE HEART, AND REMARKS UPON THE CASE,
BY WILLIAM OSLER, M.D.,
OF BALTIMORE.

J. J. H. was twenty-six years old, 5 ft. 10 in. in height, weighed 186 lbs., very strong and active, and was, to all appearances, in robust health just previous to his death. I had known him for fifteen years. His father is a printer and has occasional attacks of epilepsy. His mother is in fair health; his four sisters are all well but one, who has heart-disease.

As a young man, the patient was somewhat eccentric. In about the year 1892 he enlisted. While in the army he engaged a good deal in ball-playing, football and athletics generally. He had been a very heavy smoker. He had not had syphilis.

In the spring of 1895 he was discharged and about this time married. Shortly afterward he returned to his home. Talking with me one day, he told me that he had had an attack of heart trouble while in the army. He did not say that he had had more than one, or that it was serious. He remained in town a short time, when he left.

I heard of him working as a telephone lineman and as fireman on a steamboat. After a few months he reenlisted and was sent to Ft. Keogh, Montana. In the spring of 1896 he was discharged for disability and came home.

He told me that while in the West he had been well for a few months, had marched some hundreds of miles, but that in the winter he was taken with severe attacks of heart trouble. The name of his disease he did not remember. He was in the hospital several months. He described his attacks as coming on at first every other night, then four or five times a week; said there was a most intense pain in the heart, and awful cramps in his arms, that he was given large doses of morphine, digitalis and nitroglycerin. He said that his attacks increased in frequency and in severity, and at one time after he had had an attack he was considered dead, that they were about to remove him to the dead-room when he showed signs of life. All attempts to cure him were despaired of and he was discharged.

A few nights after I had learned from him the story of his winter's sickness, I was sent for to come to his home. I found him in bed, suffering with an intense paroxysm of pain in the cardiac region. His muscles were cramped and he had stopped breathing. He thrashed around in bed for a few moments, and then there seemed to be a cessation of the pain and a relaxation of the spasm. He breathed rapidly, had a few minutes respite, and then the paroxysm of pain and the spasm of the muscles returned. The chest became fixed and for the time being it was impossible for him to breathe or do anything but thrash about in his agony, apparently trying to jar something loose in his chest or heart.

His pulse during the interval was about 130. Just before the paroxysm it decreased in force and frequency to about 100. Sometimes there seemed to be a distinct increase in the force and tension with the decrease in frequency. During the paroxysm the pulse was very faint and slow, and as soon as it was past the pulse immediately acquired a rate of about 130 again. I gave him morphine, digitalis and nitroglycerin. The attack passed off in a few hours.

Seven days later I saw him in another attack similar to the first. This was May 19, 1896. After that he did not have another attack until July 7, 1896, when he had one similar to that which I have described. This was repeated on the 9th, 14th, 17th, 22d, 25th and 31st of this month and also on August 4th, 6th, 9th and 12th. These continued at decreasing intervals and with increasing severity until the next spring when the intervals increased and the severity of the attacks decreased. During the attacks there was no wheezing in the tubes. Exertion did not seem to cause them.

His attacks were more sure to come on and be severe after a cold, damp day. They most frequently came at from 7:00 to 10:00 P. M. I never knew him to have but one severe attack during the day, and on that day he had been walking in the hot sun, and was somewhat excited over a fireman's tournament which he was attending, but this attack was a very severe one.

I have notes of 105 attacks during which I was with him. At times the attacks were of the utmost severity. The pain was so intense that he would lose all consciousness. The muscular spasm extended to nearly all of the muscles of his chest and upper extremities, occasionally to his abdomen and legs, although it was always most severe in the left arm, neck on left side, chest and right arm, named in order of intensity. Some of the attacks lasted as long as five or six hours. There was always a similarity in the attacks, yet they were not exactly the same. Toward spring the pulse-rate in the intermission was not as rapid and was slower just before and during the paroxysm. Time after time his respirations ceased for so long a time and his pulse became so feeble that he seemed to be dead. At times every muscles was in such a spasm that he could be picked up without his bending in the least. Sometimes to pick him up a few feet above the bed and drop him was the easiest way to reestablish respiration, and it seemed that had it not been for the most active efforts, rubbing of the muscles and artificial respiration, he would never have breathed again. This working over him had to be kept up for hours.

In order to relieve his attacks I at first depended principally on morphine. The doses had to be rapidly increased until 8 to 12 grains were given in order to have any effect on the patient. Digitalis, nitroglycerin and nitrate of amyl were used as indicated. The latter never seemed to be of much benefit. When owing to the repeated use of morphine, it seemed to have but little effect, ether was tried. I used to give him four or five grains of morphine and then etherize him. As a rule, after he was nicely under the anesthetic, the spasm would stop, the pulse would remain even, and if the anesthetic was continued for perhaps 30 minutes he would sleep on several hours and have no more pain that night and very seldom the next night. When it became so that it was almost impossible to etherize him I tried chloroform. This seemed to work equally well for a short time. Later, not being pleased with its effect, I discontinued its use. I finally depended almost entirely upon large doses of morphine. In the spring, after he ceased to have his attacks, he showed no evidence of having contracted the morphine habit. After the attacks had apparently ceased he went to New York, had an attack in a saloon, was taken to the hospital, where, according to the papers, the doctors did not know what to make of him. He went to Germany, came back again, worked on a dairy-farm near Boston, doing hard work, then came back to this place again, and remained for a few weeks, when he again left.

This was in the fall of 1897. I lost track of him for some time, but when I did hear from him I learned that he had gone to Europe with a circus.

Whether he had any attacks during that winter, I do not know.

In the summer of 1898 he returned to this place and found employment as a teamster, at which occupation he worked until the middle of winter. During the winter he had a few attacks, but they were not as severe as usual. In the early spring of 1899 he left town again and worked in a paper-mill in New Jersey until the fall of 1899, when he again returned to this place. He had two or three attacks at intervals of a week or more in which I saw him. They were not of the most severe type.

November 27, 1899, he came to my office about 11:30 P. M. and told me that his pain was unusually severe. I immediately gave him several grains of morphine and noted his condition carefully. I saw that it was serious. His pulse in the interval was about 120 to 130. Just before a paroxysm it would slow down during the space of thirty seconds to about 90 and became very faint, then the spasm of the chest muscles suddenly came on. The spasm lasted from one to two minutes during which time he did not breathe. Then the breathing began again, the respirations would be rapid, and his pulse immediately ran up to 120 or 130. After having given 5 grains of morphine, which was two grains more than I had given at any time this fall, and, failing to relieve him, I gave him a little chloroform. I wet the mask only once and held it to his face a few seconds. At this time the muscles of the chest became fixed and remained so, the breathing being entirely diaphragmatic.

It was 12:55 A. M. when I gave him the chloroform. At 1:00 A. M. his pulse was 68; at 1.05 it was 72. At this time I gave him some nitrate of amyl, hoping to help respiration. It did not seem to help him, and the respirations grew more rapid and short until they ceased entirely.

A short, sharp pressure over the ribs, together with artificial respiration, reestablished breathing, which continued for some time. At 1:25 A. M. his pulse was 127; at 1:35 A. M. it was 90. I gave brandy hypodermically freely. Strychnine, nitroglycerin and digitalis were also used in medicinal doses. Hot applications and rubbing were employed to assist in restoring the circulation.

He remained unconscious and the spasm of the chest which had been constant for some hours, relaxed. The attack now continued with intermissions and paroxysms. The pulse during the intermission was about 90. Just before and during the paroxysm it decreased to 60 or less. The interval between the paroxysms grew shorter, the respiration more shallow. The pulse became slower both before and during the paroxysm; during the height of the paroxysm it was at times about 30, and then for 15 seconds could scarcely be felt. At about 6:00 A. M. the paroxysms ceased. His breathing was short, shallow, rapid and regular. The pulse increased to about 120. It was weak and he remained unconscious. The respirations became more shallow, the pulse more feeble, and he died at 6:40 A. M.

At the autopsy we found numerous adhesions between the left pulmonary and costal pleuræ. The heart weighed when removed 14 ounces and 2 drams. It was apparently displaced somewhat to the right, although the displacement may have been post-mortem. The heart was immediately sent to Dr. Osler for examination, who sent the following report and remarks bearing on the general condition.

The heart was of average size for a man of 186 pounds. Considerable amount of subpericardial fat. No pericarditis. The pericardium was everywhere smooth and glistening. The muscle of the left ventricle looked beefy and red; the wall measured in thickness 15 to 20 mm. The papillary muscles were not sclerotic. The mitral segments were thin and showed no marked abnormalities.

Right ventricle, muscle looked red and natural. The tricuspid valves were normal. The pulmonary artery measured exactly 7 cm. across the top of the valves. There was no sclerosis and the valves looked normal. The aorta measured not 6 cm. just above the ring, a small vessel for a man of five feet and ten inches, weighing 186 pounds. The arch only admitted the index finger to the middle of the second joint. The anterior coronary artery was not sclerotic in its course. There were a few flakes of atheroma along its course. Its orifice was large, unusually so, nearly 4 mm. in diameter. There was no atheroma in its immediate vicinity. Posterior coronary artery was not so large; quite free in its course. There was a small, supplementary coronary artery. No atheroma in the neighborhood; no atheroma in its course. No thrombi or emboli in either vessel.

There were a few scattered flakes of atheroma in the aorta. The aortic valves were a little thickened about the corpora Arantii and about their attachments.

On slicing the heart muscle it was red and natural looking; no infarcts; no sclerosis of its muscular fibers nor of the walls of the blood-vessels.

In men under thirty years of age angina pectoris is a very rare disease. There are cases with syphilis in which an acute aortitis is associated with severe and even fatal angina. More common are the cases of a neurotic type in high-strung, nervous persons who have been heavy smokers and given to excesses of all kinds. I have notes of four or five of this sort in young men and have described them in my monograph on angina pectoris (pp. 94-95). In Dr. Bullard's case the extent of the muscular spasm was unusual, although it is not unknown in the ordinary form of the disease. The association of epileptic seizures with angina has been described in the monograph (p. 64). The intensity of the attacks, their long duration, the fatal termination, and the negative condition of the heart and arteries make the case one of unusual interest.

MEDICAL PROGRESS.

Heart-Disease or Epilepsy.—In a few cases, writes F. S. Pearce (*Annals of Gyn. and Ped.*, Nov., 1900), a petit mal with affection of the heart action resembles syncopal attacks independent of the epilepsy neurosis. Organic heart-disease is rarely the cause of convulsions, and then paralysis or death generally follows the spasms. A slow, full, irregular pulse, less frequent and variable, the apparent unconsciousness, a tendency to rigidity without convulsions, and sweating and cold extremities, all favor the hysteroid or epileptoid nature of the attack, while organic heart-disease, cyanosis or cardiac pain point to true syncope.

Harmful Effects of Antitoxin.—While we believe that in the treatment of diphtheria and tetanus, writes W. H. Park (*Archives of Pediatrics*, Nov., 1900) the beneficial effects of antitoxins far outweigh the deleterious, yet eruptions, changes in the blood, and constitutional disturbances occasionally follow the serum injections. These are more marked from the serum of certain horses, but in susceptible persons may develop from almost any serum. The experiments of the author point to the probability that both the antitoxins and the harmful principles are substances having the properties of globulins, and with our present knowledge cannot be separated.

Gastric Surgery.—This important topic is reviewed by G. Kelling (*Arch. f. klin. Chir.*, Bd. 62, H. 2) in the following significant terms: (1) Gastro-enterostomy is indicated when through mechanical interference the normal path through stomach (hour-glass stomach), pylorus or upper duodenum is abnormal. On the other hand, such obstruction in duodenum low down or jejunum high require direct treatment and contraindicate gastro-enterostomy. (2) Rapid regular emptying of the stomach also calls for this procedure which is greatly aided by placing it at the fundus and by closing the pylorus. (3) Patency of the fistula is guaranteed only by shutting the pylorus, which also checks return of food into the stomach. (4) In enteroptosis the posterior gastric wall is the best site of union. (5) With a very large, lax stomach Roux's method is best, with the entero-entero-anastomosis added, except when the gastric wall is so hypertrophied as to provide a spur to prevent regurgitation. (6) Spur-formation arises from a disproportion between the diameters of the fistula and of the intestine, entirely avoidable through proper technic. If the suture is the ordinary continuous type, it is usually safer to add an entero-entero-anastomosis. (7) Along the proximal loop of this secondary anastomosis the distance from the stomach should be not over ten centimeters. (8) The strength of the suture line must not be tested with improper food. Rather large quantities of fluid diet are less dangerous than even small masses of solids which can easily cause perforation. (9) Rapid emptying of the stomach depends upon the fact that for the most part gastric peristalsis ceases when the duodenum is full. (10) Intestinal digestion of albumin and fat is less active, because the stimulus excited by the acids and fat upon hepatic and pancreatic secretions for larger degree fails. (11) Flow of bile and pancreatic juice into the stomach is not necessarily injurious. (12) Hydrochloric acid is less thoroughly neutralized than when it first reaches the duodenum. In weakly subjects with hypersecretion it is therefore advisable to make a very long loop—Von Hacker's method, with entero-anastomosis. (13) The disadvantages of the gastro-enterostomy are in time compensated for, in degree and delay according to the resistance of the organism. Hence the operation should be done, before the causal disease has too greatly reduced the constitution. (14) The most normal method with least after-symptoms is Von Hacker's with the entero-entero-anastomosis. If the pylorus is patent it should be sutured, so as to insure full function of the gastro-enteric fistula.

Uterine Fixation.—The functional results in uterine fixation are apt, says Max Cohn (*Zeitschr. f. Geburtsh. und Gynäk.*, Bd. 43, H. 3), to be somewhat better in the ventral than in the vaginal method. In other details the comparison stands in the following terms, from the material available at the Breslau clinic: Vaginal fixation restores the relation between the fundus uteri and the bladder, displaces the portio vaginalis, is useless in retroflexions with adhesions unless these are freed through the cul-de-sac of Douglas, causes functional difficulties during parturition by changes in the relations, is less dangerous intrinsically, causes no hernia, leaves no scar for intra-abdominal adhesions, has a shorter healing process and fewer subjective sequelæ, and probably more nearly restores natural anteversio-flexis.

Gastroduodenostomy.—E. Villard (*Revue de Chir.*, Oct., 1900) describes a subpyloric anastomosis between the right extremity of greater curvature of the stomach and the left aspect of the descending part of the duodenum. The union may be made in any of the well-known methods and placed either on the anterior or on the posterior surfaces of the viscera. The site considered best, from the author's experience, is the latter, reached by tearing through the right limits of the great omentum, exposing to view the upper anterior surface of the pancreas over which the new union then passes. Advantage is gained by passing a heavy suture one or two centimeters above and below the limits of the vertically-placed anastomosing incision, through the sero-musculares of each viscus, which serve as tractors and as final stout reinforcing sutures when tied. By means of these, in the writer's choice, the stomach and bowel are brought upward, the posterior rows of sutures placed, then the anastomosis is done and, finally, the anterior banks of stitches inserted. Lavage the night and the morn-

ing just prior to the operation is most important, except in those too enfeebled to stand it. Deep ether narcosis is best, as in all laparotomies, because it combats shock more. In the after-treatment, fluids in dram-doses, except water and gaseous fluids, are allowed at once at short intervals, increased slowly in amount and time, until about one week after, when more solid food may be tried. Morphine to complete repose is absolutely advisable for the first two days, unless the subject is too feeble. The value of the operation lies in its brevity, simplicity, safety, respect for the normal physiology by permitting the gastric contents to empty above the biliary and pancreatic ducts, and in its freedom from the double anastomosis (with the increased shock thereof) in the modern gastro-enterostomies. It presents the difficulty of having the deep operative field more or less fixed against the vertebral column; but this is obviated by the fact that gastric cases are usually so thin that the posterior limits of the abdomen are most readily accessible. The indications are *par excellence* cicatricial non-cancerous or spastic pyloric obstruction, old ulcers or early cancers if not too near the outlet, and other conditions in which pyloroplasty or gastro-enterostomy would alleviate or cure.

Early Diagnosis of Ascites.—L. Landau (*Centralbl. f. Gynäk.*, Nov. 10, 1900) says that it is very important to appreciate small quantities of fluid in the abdomen before the usual diagnostic signs become manifest. During the past year he has found the following sign almost pathognomonic. With the patient in the usual lithotomy position, while the axis of the trunk is horizontal, fluid in the pelvis floats up to the uterus so that it feels as if it were on a water-bed and the abdominal and vaginal hands come less regularly together at each side of it. If now the exaggerated lithotomy position is used, with the pelvis much higher than the head, the pelvis will empty itself and its contents resume their normal palpable condition.

Influenza Simulating Whooping-Cough.—The characteristics of this, writes F. Forchheimer (*Archives of Pediatrics*, Nov., 1900) are the fever, its epidemic and contagious nature irrespective of age, and the association with respiratory or gastro-intestinal symptoms. The cough is followed by a whoop, occurs mostly at night but to some extent in the daytime, and is not accompanied by the blue color of the mucous membrane and tongue of pertussis. Ulcers on the tongue and frenulum are not uncommon. In four of the author's cases typical influenza pneumonia developed, in many there was persistent croup, in several edema of the glottis, and in three meningitis. Former attacks of true pertussis or of this pseudowhooping-cough do not confer immunity. The author's treatment consists of quinine in dose of not less than one decigram less than the age in years, and one centigram less than the age in months. When the cough has developed thoroughly, phenacetin or antipyrin gives relief, codeine keeps down the cough, and chloral secures sleep. Belladonna usually disappoints, but at times its effects are gratifying.

Toxicity of Hospital Air.—R. Binaghi (*La Rifor. Med.*, Nos. 219, 220, 1900) gives the result of his experiments in the study of the atmosphere of the hospital and its relation to wound infection. Acting on the theory that a relation might be found to exist between meteorologic factors and the number of germs in the air, analyses were made of the air of the operating-room, wards and dispensary at frequent intervals from November to June, the variations in temperature and pressure of the atmosphere at the time being noted. Petri dishes with glycerin-agar were exposed to the air of the room to be examined at different distances from the floor and for definite length of time; after proper cultivation, solutions of the colonies, in sterile water, were made and injected into the jugular vein of rabbits for tests and for control tests; of fifty-two rabbits inoculated, thirty-one died (59.8 per cent.), thirteen or these deaths being from staphylococcus infection. It was observed that the greatest impurity of the air was found in the dispensary, next in the private corridor, next in the wards, and, lastly, in the operating-room, giving a mortality respectively of forty, thirty, twenty-five, and fifteen per cent.; *i. e.*, the air of the dispensary contained the most staphylococci, while the air of the operating-room contained the least of these germs. The blood of the animals thus killed by inoculation was found to contain in addition to the staphylococci, the bacillus pyogenes fetidus; the bacillus coli; the bacillus typhi similis; the diplococcus of Fraenkel, and the bacillus mucosus. His conclusions are: (1) Staphylococci are the germs most frequently found in hospital air. (2) Their number varies and depends upon the number of people coming into and going out of the room. (3) The influence of temperature and of atmospheric pressure cannot be definitely stated, but the author's investigations proved that the germs were more frequent in the presence of high temperatures and pressures. (4) There would seem to be much justification for the idea of wound infection from atmospheric air, hence the importance of plenty of light and air in hospitals, especially in the operating-rooms, and the advisability of having as few people present at an operation as possible.

Rubber Gloves.—Baron Küster (*Archiv. f. klin. Chir.*, Bd. 62, Hft. 2) states that far from offering adequate protection against wound infection gloves really invite it by complicating the operative machinery and adding another possible source of error. Thorough and conscientious disinfection of the hands by methods which will naturally improve with time is not only simple, but in the long run more efficient.

A Simple Leg-Holder.—J. Kalabin describes a simple device, applicable to any ordinary four-leg table and in any household for examinations,

treatment and operation (*Centralbl. f. Gynäk.*, Nov. 17, 1900). The patient is placed upon any table so that the buttocks come just beyond one end. With towels or sheets tied together to form a rope, the lower extremities, held in universal flexion by an assistant, are maintained so by fastening the rope first to one leg of the table at the patient's head, passing it directly to the thigh, of that side and about it once just above the knee, thence across to the opposite side where the other thigh is secured in the same manner and the rope finally tied to the other leg of the table at the woman's head. The distance between the thighs and the flexion of the thighs on the abdomen are easily variable. The simplicity and readiness of this means commend it. The writer has given it long trial with entire satisfaction.

Menstrual Condition of Average Girl.—In order to determine in what degree normal menstruation exists among ordinary American girls of to-day, an investigation has recently been made by G. J. Engelmann (*N. Y. Med. Jour.*, Dec. 8, 1900) inquiring into the peculiarities of this function as it exists in 5000 girls between fifteen and twenty-six years of age who attend high or normal schools or colleges or are employed in department stores. It was found that it recurred with regularity in not more than 50 per cent. and that it appeared every 28 days in only 30 per cent. of cases. Irregularity increases distinctly with mental strain or physical exertion, the former tending to shorten the intervals, the latter to prolong it. The average frequency in one freshman class was 36.75 days, a prolongation probably due to change of habits. The average duration was 4.6 days, varying from 2 to 7 days. Suffering is present in from 50 to 80 per cent., being less among the college girls than those occupied in stores. Among saleswomen who stand 91 per cent. are afflicted with pain during this epoch and a large percentage are at least partially incapacitated for work.

Lupus and Roentgen-Rays.—W. A. Pusey (*Jour. Am. Med. Assoc.*, Dec. 8, 1900) reports a case of lupus in a woman, thirty-eight years of age, in which a cure was brought about by the use of Roentgen rays. The disease involved all of the lower face on the left side, the chin, and the right face below the angle of the mouth. The ulcers were typical, and the scars were sufficiently rigid to interfere with motion. Tubercle bacilli were found in a section made from a piece of tissue taken from the border of one of the ulcers. The case was clearly one of lupus, not a scrofuloderma. The treatment consisted in repeated exposure of the diseased parts to X-rays. The treatment had to be discontinued several times because of a beginning dermatitis from the rays. At first the treatments were given daily, later with occasional intermissions of three to four days. The length of each exposure was from five to fifteen minutes, and the distance of the tube from the surface varied from 15 to 5 cm. Adjacent surfaces were protected by lead masks. After a little more than three months of this treatment the parts were entirely healed. The writer says that only time can say whether it is a complete cure or not. He calls attention especially to the short exposures required, and the short course of the treatment with X-rays, as compared with the treatment by Finsen's ultra-violet light which requires exposures of an hour each, and a course of treatment lasting a year or two. In this treatment of lupus by Roentgen rays Pusey used no aids except wiping off very unclean ulcers, while Finsen resorted to pyrogallic acid, curetting, and other local adjuvants to treatment. While this method of treatment of lupus by X-rays has been in use in Germany for three years, Pusey says this case is only the third reported in this country.

Diphtheria Antitoxin.—The efficacy of using the antitoxin of diphtheria is again questioned by J. E. Herman (*N. Y. Med. Jour.*, Dec. 8, 1900) who dissects some of the statistics on the subject to show that the apparent decrease in mortality is the result of other causes. The discovery of the bacillus of Klebs-Löffler and the inclusion among the cases of diphtheria of many patients who previously would have been considered as simple "sore throats" rapidly increased the number of reported victims and consequently would have lowered the death-rate. The appearance of the antitoxin at about the same time received undue credit for the apparently beneficial result. Furthermore, the death-rate from diphtheria has for a long time shown an increase extending over many years and then a gradual decline. The introduction of antitoxin happily appeared when the death-rate was at the apex of its ascent in this country. In most of the large cities of England the rate of mortality has increased since the introduction of this remedy, so that the author is inclined to believe that the laurels placed upon antitoxin have been to a great extent unmerited.

Abdominal Hysterectomy.—Robert Sorel (*Gazette de Gynecol.*, Nov. 1, 1900) makes the following points as to this method of removing the uterus: (1) Anatomical considerations show that the cancerous focus beginning in the uterus alone spreads very rapidly to the next adjoining tissues, *i. e.*, vagina, broad ligaments, ovaries, and lymphatic glands, often in a most precocious manner, so that it is quite impossible to diagnose when such invasion has begun. (2) Therefore an operation which purposes radical cure must aim at ablating all these tissues, even including the lymph-glands. (3) Manifestly the only means of doing this well, even theoretically, is by the abdominal route. (4) Since it is not possible to remove *all the* lymphatics, the operation should be practically contra-indicated if more than the uterus is diseased. (5) In order to establish good statistics of this operation some such basis of comparison must be established and even microscopical examination of the uterus and of its lymphatics must be made.

THERAPEUTIC HINTS.

Prophylaxis in Typhoid.—To prevent the disease, writes Delafield, the feces should be received into a vessel and thoroughly mixed with a disinfecting fluid before being emptied into the common receptacle. All soiled clothes are to be soaked in a similar solution. Good disinfectants are:

℞	Mercuric bichlorid.....	8.0	(ʒij)
	Ac. hydrochlor.....	40.0	(ʒx)
	Aquæ .....4 liters		(gal. j)
Or			
	Mercuric bichlorid.....	8.0	(ʒij)
	Potass. permangan.....	8.0	(ʒij)
	Aquæ .....4 liters		(gal. j)
Or			
	Chloride of lime.....	15.0	(ʒiv)
	Water .....4 liters		(gal. j)

Mucous Diarrhea.—Often in the milder forms a mustard plaster or other counterirritant to the abdomen is all that is needed, but more frequently it must be followed by tonics and astringents such as:

℞	Argent. nitrat.....	0.13	(gr. ij)
	Ext. hyoscyami.....	0.3	(gr. v)

M. ft. in pil. No. X. Sig., one three times a day.

Or

℞	Plumbi acet.....		
	Ext. opii.....aa.	0.13	(gr. ij)

M. ft. in pil. No. X. Sig., one three times a day.

Constant tendency to relapse demands secretory stimulants, as:

℞	Acid. nitric. dil.....	4.0	(ʒj)
	Tr. cardam. comp.....	60.0	(ℨij)
	Tr. gentian. comp.....	60.0	(ℨij)

Sig., dessertspoonful every four hours.

If the pills above-named fail to check the diarrhea, the following may be used, but not to stop the movements completely:

℞	Acid. sulph. arom.....	6.0	(ʒiss)
	Spt. chlorof.....	8.0	(ʒij)
	Tinct. opii camph.....	60.0	(ℨij)
	Syr. zingiber.....120.0		(ℨiv)

Sig., dessertspoonful every two hours.

Or

℞	Tinct. kino.....	30.0	(ℨj)
	Tinct. catechu comp.....	30.0	(ℨj)
	Mixt. cretæ.....	90.0	(ℨiij)
	Aq. cinnamomi....q. s. ad.	180.0	(ℨvj)

—*Hare in Practical Therapeutics.*

Renal Colic.—An alkaline diuretic and genito-urinary sedative is:

℞	Potass. citrat.....	2.0	(gr. xxx)
	Tinct. hyoscyam.....	4.0	(ʒj)
	Aquæ .....q. s. ad	30.0	(ℨj)

Every six hours between meals after the acute attack is over. This to be supplemented by copious draughts of hot water until microscopic evidences of blood and gravel have disappeared from the urine. The loins and abdomen are kept dry and warm with a flannel roller. Constipation is relieved by large warm-water or soap-suds enemata, which may follow the administration of calomel, 0.25 (gr. iv), with advantage.—*Bruce in Treatment in Practical Medicine.*

Gonorrheal Rheumatism.—Put to bed only if lower extremities are attacked, says J. R. Hayden, immobilize joints, and apply compresses wet in cold lead-and-opium wash. When the acute symptoms subside apply the Paquelin cautery, or rub in compound iodine ointment, and make firm and uniform pressure by a bandage. If then the fluid remains it may be withdrawn and the joint irrigated with mercuric bichloride, 1-5000. In the chronic stage the joints are massaged and exercised daily, and large doses of potassium iodide administered. The most important thing of all, however, in gonorrheal rheumatism is to cure the urethral lesion.—*Venereal Diseases.*

Primary Laryngeal Tuberculosis.—Surgical intervention is indicated, writes Samuel Bernheim, when the lesion is circumscribed and its extirpation can be early and thorough. Yet usually the focus is too deep and extensive when it is discovered, and resort must be had to medical treatment. In the stage of infiltration the application of carbolic or lactic acid and the inhalation from a pint of boiling water containing 8 to 15 drops of the following:

Balsam peruv.....	10.5	(ʒiiss)
Alcohol	6.0	(ʒiss)

is to be preferred. In the ulcerative stage insufflations of morphine and iodoform and applications of iodoformized glycerin may be of use. The best remedy of all is carbolic acid, and the following may be used as spray four times a day:

℞	Acid. carbolic....	0.30-0.60	(gr. v-x)
	Aq. lauro-cerasi..	20.0	(ʒv)
	Potass. bromid...	30.0	(ℨj)
	Glycerin....	30.0	(ℨj)
	Aq. dest.....	300.0	(ℨx)

But no treatment will avail unless means are taken to increase the resisting power of the individual by food, fresh air and climate.—*Revue médicale de la Suisse Romande.*

Postpartum Hemorrhage.—Have patients on back, writes Playfair, and expel contents of uterus by a firm grasp of the hand through the abdominal wall, then gently knead for a long time. If this does not suffice, pass hand into uterus which is incited to contract, and give ergotine hypodermically. The general treatment is that for any hemorrhage. Among the most important excitors of uterine contraction is cold used intermittently by ice-bag over fundus, rectal injections of ice-water in rectum or uterus, or the ether-spray over abdomen. Injections of hot water with a few drops of creolin are valuable, and if nothing else will do, the uterus must be plugged with iodoform gauze. Penrose recommends vinegar. Sometimes the bleeding is from the cervix, and can be stopped by a perchloride of iron swab.—*System of Midwifery.*

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SATURDAY, DECEMBER 22, 1900.

AGGLUTINATION DIAGNOSIS OF TUBERCULOSIS.

WITH the advance in the treatment of tuberculosis an accurate method of very early diagnosis of the disease has become even more than ever one of the great desiderata of modern medicine. The thermometer has done much to reveal the presence of latent tubercle, the Röntgen rays have been of distinct use in institutions, Litten's diaphragm phenomenon has proved helpful to those who have opportunities for exact investigation. The problem of early diagnosis is so important that conservative clinicians still think themselves justified, despite its bad repute, in having recourse to the tuberculin test. But the profession is looking eagerly for some new discovery in this matter, and the further investigation of the possibilities of serum diagnosis for tuberculosis as proposed by Arloing of Lyons seems eminently desirable.

Although the tubercle bacillus is a strictly non-motile organism, Arloing has found that when the blood of a tuberculous patient, in a dilution of about one to ten, is added to a homogeneous liquid culture of the organism, a clumping takes place which is analogous to that which occurs in the Widal test for typhoid fever. The best culture medium for the purpose is glycerinated beef-broth. In animals, this test has, in its inventor's hands, never failed to reveal the presence of tuberculosis, however latent, and has never proved positive in a non-tuberculous case, except once, when one of the forms of pseudotuberculosis without demonstrable tubercle bacilli was found at autopsy. In human beings in 192 cases of clinical tuberculosis the test was positive in about 88 per cent. of the observations. In 130 patients suffering from diseases other than tuberculosis the test was positive in 34 per cent. of the cases. In supposedly healthy persons a positive reaction was obtained in about 27 per cent. of the observations.

That tuberculosis is often latent is well known. Thoracic glands frequently contain tubercle bacilli which lie dormant for years. Whether these cases will render the value of the test nugatory remains to be investigated, but if any clinical suspicions of the presence of tubercle have been aroused it is certainly well to know that there are living tubercle bacilli within the body, even though they may not at the moment be giving rise to any inflammatory process.

The test fails in advanced tuberculous cases only when the disease is progressing rapidly and very little resistive reaction against the invasion of the disease is evident.

It is still a matter of dispute whether the Widal reaction of typhoid fever is a manifestation of infection or resistance. The fact that in cases of typhoid fever, in which the occurrence of the Widal action is delayed, a marked tendency to subsequent relapse has been noted would seem to indicate that the agglutination of the typhoid bacilli is due to the presence of immunifying principles in the blood. The absence of Arloing's reaction in advancing tuberculosis would seem to point to a similar conclusion and demonstrate at the same time the essential identity of the two reactions.

In certain recent cases in France serum diagnosis has rendered possible the differentiation of typhoid fever and generalized tuberculosis, the Widal test proving negative, Arloing's test positive and the autopsy substantiating the conclusion. Blumenthal of Leyden's clinic in Berlin reported at the recent International Congress that the serum diagnostic reaction was of use also in differentiating the character of serous effusions into the various body cavities. In tuberculous peritonitis he has found the reaction to occur very distinctly and to give trustworthy evidence. As the Widal test has made this type of

diagnosis comparatively well known, and as it puts patient and physician to such little inconvenience, it seems eminently advisable that further investigations should be made. This is all the more important because it is especially in latent tuberculosis with good resistance, that is, in the initial stage of the disease as it ordinarily occurs, that Arloing's test promises to give significant information.

THE SAVING GRACE.

A PHYSICIAN, more than any other man, needs to cultivate a margin to his thoughts; or a sort of mental penumbra to which he can assign all facts that are neither black nor white, all conditions that cannot be classified as of either light or darkness.

The young physician begins his work with a mind that is keen to fact and intolerant of vagary. The conscientious physician is all for honesty and faithful work, and cannot bear the ingratiating qualities of the quack. Therefore it is something of a surprise to every self-respecting man to find that the accurate, thorough mental equipment and skill that he has striven so hard to acquire is almost wholly unappreciated by his *clientèle*, and that his success as a practitioner depends on something quite different, a something that the quack, the Christian Scientist, and the herb-doctor alike possess, the ability to recognize and cope with the ignorance and superstition around him.

We will grant that the average well-educated, honest medical man has a bright and shining sphere of influence in a society that represents outer darkness concerning matters of science. The best plane on which the two can mingle to their mutual advantage is in a realm of half light. In other words, before a physician can expect his patients to appreciate his point of view on matters of health, he must make a careful study of their point of view. And what is more, if he is to accomplish anything he must accept their point of view and dim the image of his own perceptions by trying to grasp facts from the standpoint of ignorance.

In an address by Geo. F. Sydenham, on the Vulgar Errors and Superstitions of West Somersetshire and their Relation to Medicine, published recently in the *British Medical Journal*, he sets forth a host of hard, inherited ideas that a general practitioner must assimilate before he can practise successfully in certain parts of the enlightened island.

In West Somersetshire, to the medical idiosyncrasies of which he confines himself, the graduate of a London medical school must accept his place along with the herbalist, the white witch, and the "seventh son" doctor who cures by the laying on of hands on a Sunday morning, both patient and doctor having fasted from the previous night. One man, the seventh son of a seventh son, told this physician that as a boy he never had had a meal on Sunday, as his parents derived a good income by starving him into the proper condition for miraculous cures.

The physician in West Somerset must invariably order the placenta burnt, as the number of times it crackles will foretell the number of children to be born; he must wrap the umbilical cord in burnt rag, although he does not know why, and must submit to having his patient's labor facilitated by the holding of the pepper-pot to her nose. Thorns and inflammation, he learns, are especially susceptible to prayer, which must never be considered superfluous, even after the physician has used his lancet; and he is a wise man who recommends it as far less objectionable in the treatment of hemorrhage and burns than the application of cobwebs and tobacco. When it comes to curing goiter by the touch of a corpse and reducing a hernia by crawling downstairs head first, one feels inclined to pity that man whose rounds take him over the West Somerset moors.

And yet many physicians of this country might collect as varied a list of superstitions even among well-to-do patients; vagaries of diet, of bathing, of clothing, superstitions in which trust in Providence takes the place of hygiene, and prayer serves equally as well as a disinfectant. Personal idiosyncrasies regarding climate; beliefs concerning the nature and cause of ailments that the patient does not possess; to say nothing of the passion for patent medicines; the exalted fervor of Christian Scientists; the calm pity of Theosophists, and the enthusiasm of Vegetarians; all these the physician must continually respect, if he is to be respected.

But what element must he infuse into that mental margin of his make-up, to be all things to all men, and yet be himself an honest man? We advocate the saving grace of humor; that keen appreciation of the ridiculous that never intimates how ridiculous it is, that quiet perception of the grotesque that makes no sign, and that wide interest in men that takes in all their peccadillos, and cranky ideas and intolerances,

without giving evidence of any in return. It is this grace of humor that has saved many a situation. And when we are ever particularly depressed by the inability to make headway against superstition and indifference, we pray for that fine mingling of tact and fact that Sir James Y. Simpson showed when he was violently reviled by the Scotch clergy for using chloroform to relieve the pains of childbirth. Their opposition was based upon the primeval curse, "In sorrow shalt thou bring forth children." Simpson gently reminded them that the first operation recorded in history was performed under anesthesia, since, when God created Eve from one of Adam's ribs, he "caused a deep sleep to fall upon Adam."

PREVALENCE OF OBESITY.

IT is positively amazing to see how fat the well-to-do people of New York are growing. We might soften the term, and refer to "unusual abdominal development" and a "tendency to obesity," but we agree with Mr. Gilbert in his satire in the "East India Merchant," wherein he says:

> "Upon my word it seems to me
> Unpardonable vanity
> And worse than that
> To call your fat
> An adipose deposit."

A series of impartial counts made in the most representative streets, theaters and public conveyances of New York, revealed the fact that among people otherwise normally developed, there is a remarkable proportion with large and protuberant abdomens. There were in a first count of one thousand persons from about twenty years of age upward 281 or over 28 per cent. thus afflicted. In a further series of one hundred taken in the less prosperous eastern district, the percentage was as low as 14, while in another series of 200 counted on the most representative street, Broadway, there were 71 persons with excessively developed abdomens, a percentage of over 35. In the corridors of one of the high-class residential hotels the number of similarly abnormal individuals in a total of 100 was 70, while in a poorer class hotel the proportion was the lowest seen anywhere, namely, 11 in 100. Altogether in a random count on 1500 persons of adult life 447 were decidedly deformed, giving an average of 29.8 per cent.

In applying the discriminating eye to these unsuspecting persons who innocently furnished these statistics, there was no attempt to compare them with the Belvidere standard. Although the normal waist-line should be less than that of the chest, and the abdomen in a straight line with it, yet it has not been forgotten that health and vigor go hand in hand in this climate with a certain amount of fat; and as long as the symmetry of figure was preserved, and the abdomen not startlingly protuberant, the plump and well-nourished were included among the normal. Therefore from this conservative standpoint the rather startling statement may be made that in the American adult, as typified by the New York man, for the men showed this tendency rather more than the women, the undue development of the abdomen is a menace to the physical health of the race.

The cause of this condition, so insidious in its outset, must be sought for in a disturbance of the balance of nutrition. Either overeating alone or overeating combined with insufficiency of exercise is to be regarded as the prime factor in bringing it about. In the metropolis success or a modicum of success means three hearty meals a day, and in very many cases an evening supper thrown in. This of itself would probably produce corpulence, but when there is added to this overfed condition a state of absolute muscular laziness that is bound to increase with a man's success, it is difficult to see a limit to his obesity.

The natural development of the means of transportation has gradually but surely brought about the condition that the most prosperous men live farthest from their business. Not many years ago the majority of persons walked to and from business if the distance was not too great, the horse-cars and busses being altogether inadequate. Later came the elevated railroad permitting of great city development, but distinctly curtailing regular exercise, which became now with business people largely limited to the walk to and from stations. Even that was for many abolished by the advent of the electric cars whose further opportunities for physical repose were readily accepted even at the expense of time.

Not only in travel, but also in domestic and household work, the tendency is to favor the physical being. In the ordinary two- or three-story house of a generation ago, the housewife ran up and downstairs many times a day. In the present era of apartment-houses, the long flights of stairs make the members of the family

more economic of their physical effort, and the cramped quarters of a flat give but little opportunity for exercise in domestic duties; while the wealthy, who live in large apartments and family hotels as well as many in their own huge dwellings, depend entirely on elevators.

The same tendency toward laziness is seen in the distinct diminution of exercise in sports. The middle-aged have derived much benefit from bicycling in recent years, but there is now a noticeable falling off in this respect. Indiscriminate use of the bicycle probably harmed many and has left not a few damaged hearts, but the exercise moderately taken undoubtedly helped to retard the tendency toward fat accumulation. Now the wealthy man has his automobile, and the less wealthy man takes a trolley ride into the country. Golf, the present fad, is too deliberate in its movement to rank with the bicycle as a preventor of adiposity. Moreover it will never become the game of the wage-earner, as it can be played only in the daytime.

Aside from actual interference with the heart from overlying fat, we must consider the extra amount of work necessarily placed upon that organ in maintaining circulation and its increased liability to muscle weakness.

The tendency to grow stout is generally treated as a subject for levity, but when adiposity becomes excessive, especially in the abdomen, it is a pathological condition, for the accumulation of fat there marks the onset of physical decay.

As long as the present trend toward physical inertia exists, we see but small chance of betterment; that which is accomplished must be done along individual lines. The recent fashion among many Wall Street men of walking to and from business is to be highly commended. A more active life is the only radical treatment. It should become a custom with all to find the time for several miles of brisk walking daily. If common sense will not develop the custom it must be developed as a fad; or we shall soon find our prosperous American citizen figuring in the comic papers with abdomen like a Dutch uncle, and, what is more to the point, we shall have a shorter life-limit, and a flabby, degenerate muscleless race of men in our large cities.

Smallpox in New York.—As indicated in last week's MEDICAL NEWS, smallpox cases continue to be reported nearly every day. It is probable that the disease will be present in New York throughout the winter. The vaccinations are progressing rapidly.

ECHOES AND NEWS.

NEW YORK.

President of Lunacy Commission.—Rumors of a change in the personnel of the Lunacy Commission are about. The President of the Lunacy Commission must be a physician of ten years' general experience and of five years of special experience in the treatment of the insane. It is believed that a physician connected with one of the State hospitals for the insane will be appointed.

Presbyterian Hospital Thirty-Two Years Old.—The thirty-second anniversary of the Presbyterian Hospital was celebrated last week in the dispensary of the hospital. The hospital was open for public inspection between 1:30 and 6:00 P. M., and nurses in uniform were ready to conduct people through the building. The anniversary services were held at 3 o'clock and about a hundred persons were present, including all the officers and fourteen of the managers. The address was delivered by the Rev. Dr. Purves. He gave a general outline of the work done by the hospital.

Health Board Presidency.—One of the changes proposed by the Charter Commission removes the provision which now prevents the President of the Board of Health of New York City from being a physician. The new provision does away with the Board as it now exists, and provides for the appointment of one Commissioner, who *may*, or *may not be* a physician, by the Mayor, the appointee to act with the Police Commissioner and the Health Officer of the Port.

Vaccination of Brooklyn Police.—Early vaccination of a general character in the ranks of the Brooklyn police is likely, according to Dr. A. W. Ford, a member of the Borough Health Board. Dr. Ford says that there is considerable apprehension among medical men of a possible outbreak of smallpox in Brooklyn.

Claims of Christian Science.—It was recently claimed by a healer before one of the New York Courts that Christian Science can cure cancer, smallpox, consumption—in fact all diseases.

New Hospitals Needed.—At the annual meeting of the State Charities Aid Association, held in this city last week, it was declared that these additions to the Department of Public Charities were urgently needed. A new Harlem hospital, a separate hospital for phthisis cases, a convalescent hospital, a small municipal lodging-house for women and children, and three nurses' homes, one at the City Hospital, another on Randall's Island and a third at the Almshouse.

Obituary.—Dr. Leroy J. Brooks, for more than twenty-five years one of the leading physicians of Chenango County, N. Y., died last week from uremic poisoning resulting from Bright's disease. He was a member of the county, State and National medical societies, and was widely known.

Dr. Adolf Pramann, one of the oldest practi-

tioners in this city, and well known for his charities, died at his residence, No. 251 East Eighty-sixth Street, on Tuesday, December 11th, from a complication of diseases, leaving a widow, but no children. He was graduated from the University of Würzburg in 1856, and for ten years served as surgeon on the steamers of the North German Lloyd line.

Dr. George H. Elliott, of New York, died at the home of his father, William H. Elliott, in Manchester, N. H., on the 17th inst. He was fifty-five years old and a graduate of Denver Medical College. He served in the Civil War with the Seventh New Hampshire Regiment. He was a member of Hope Lodge, F. and A. M., of New York; honorary member of the Lambs Club, and a member of New York and Denver medical societies. He was also a Commissioner of Lunacy in New York.

Dr. John C. Acheson died at his residence, No. 220 East Seventeenth Street, last week from heart disease, after an illness of six weeks. He was born in this city on October 17, 1832, and was one of the oldest graduates of the University of the City of New York, his class being that of 1853. His brother, Joseph, was the first graduate of the University, class of 1833, and his father was one of the founders. He was graduated from the College of Physicians and Surgeons in 1859, and was one of the first physicians to be employed by the city when the Board of Health was established. He was a charter member of the Zeta Psi and a member of the County Medical Society. Two sons survive him, J. Charles and Harold Stuart Acheson.

Typhoid in Sing Sing Prison.—Warden Johnson announced last week that typhoid had broken out among the convicts in Sing Sing prison. There are now over twenty patients with typhoid in the prison hospital, and additional cases are developing daily. Dr. Irvine, the prison physician, recently held a conference with Warden Johnson, when it was decided to fit up an additional building as an emergency hospital. A wing in the new State building will be used for this purpose. The supply of water to the prison comes from the Croton reservoir, and the water before it is consumed in the prison is boiled.

New Lying-in Hospital.—J. P. Morgan's gift to the Society of the Lying-in Hospital, the fine new building now nearly completed on the north side of Stuyvesant Square, is fully described in the annual report of the Society, made public last week. The basement will be devoted to the out-door work; the first story to the executive offices, the second to the nurses' department, the third to the septic department, and the fourth, fifth, and sixth stories to wards for patients, containing about 200 beds. The seventh story contains the operating-room, laboratory, kitchen, and laundry, while the eighth story is a continuation of the laboratory, with additional amphitheater seats for the operating-room. The births in this borough are 150 per day, but there are only two hospitals on Blackwell's Island maintaining wards where cases of childbirth are received, and the Emergency Hospital in East Twenty-sixth Street, between Second and Third Avenues, contains only thirteen beds, making, according to the report, a total accommodation at the disposal of the city of sixty-eight beds for waiting women and fifty-six beds for women in childbirth. During the year past the Society, in its present quarters, had 3018 applicants for medical treatment, and cared for 2162; out of this total there were only eight deaths. The average wages received by the husbands of the women treated was $29.84 per month, and the average rent paid $8.53, leaving a balance of about 70 cents per diem on which to support and clothe each family.

Scientific Optics.—Scientific workers the world over have long been familiar with the remarkable results accomplished in the field of applied optics by the genius and industry of Prof. Ernest Abbe of Jena, which have carried that science to more important conclusions than have been reached before and which have developed the great optical works at Jena, thus uniting the theories of the pure scientist with the practical details of modern methods of manufacture. The endorsement which the University of Jena gave to Prof. Abbe's early endeavors has brought great benefits to the University itself and has opened a new field of scientific activity in encouraging trained men to devote themselves to purely scientific problems and to their practical solution. In America, notwithstanding the rapid extension of scientific research, the higher optical field has not seen a corresponding development, for, although there have been large commercial undertakings, they have not shown the tendency to develop along the lines which have been so noteworthy abroad. With the death of the late Herbert R. Spencer the last of the three great American workers in applied optics passed away and as yet no trained American scientists have come forward to supply their places. It is of general scientific interest to note the arrival in this country of one of the trained coworkers with Prof. Abbe at the Zeiss establishment, Hermann Kellner, Ph.D., who has already entered upon his duties as scientific director for the Spencer Lens Company of Buffalo, N. Y. Here he will continue his scientific researches, with especial reference to microscope and telescope objectives. The attempt to establish under American conditions a scientific institution in Buffalo similar in methods to that at Jena will unquestionably be watched with great interest by American scientists.

New York State Hospital for the Care of Crippled and Deformed Children.—This institution, incorporated by the last Legislature, is now open for the reception and treatment of patients. The Hospital is located at Tarrytown, N. Y., at Paulding Avenue and the Hudson River, about a mile south of the railroad station. It has accommodations for about thirty patients. The Board of Managers appointed by Governor

Roosevelt are the Right Rev. Henry C. Potter, Bishop of New York, President; George Blagden, Jr., Secretary and Treasurer; J. Hampden Robb, J. Adriance Bush and Dr. Newton M. Shaffer. The Hospital was established "for the care and treatment of any indigent children who may have resided in the State of New York for a period of not less than one year, who are crippled or deformed, or who are suffering from a disease from which they are likely to become deformed." The following conditions are imposed upon all applicants: "No patients shall be received except upon satisfactory proof made to the surgeon-in-chief by the next of kin, guardian, or a State, town or county officer, under the rules to be established by the Board of Managers, showing that the patient is unable to pay for private treatment. Such proof shall be by affidavit. If there was an attending physician before the patient entered the Hospital, it shall be accompanied by the certificate of such physician giving the previous history and condition of the patient." Patients from three to fifteen years of age will be received for treatment, and all applications will be acted upon in the order of their reception. No patient will be admitted without an examination by and a certificate from the surgeon-in-chief or his assistants. No patient whose condition is such that death is likely to occur in the immediate future, or whose condition precludes a reasonable amount of relief as the result of treatment, will be admitted. Application for admission should be made to Dr. Newton M. Shaffer, Surgeon-in-Chief, No. 28 East 38th Street, New York, who will appoint a time and place for the examination of the patient. Patients living at remote points in the State are referred to the following gentlemen, out of town members of the Consulting Staff: Dr. A. Vanderveer and Dr. S. B. Ward of Albany, N. Y.; Dr. Louis A. Weigel, Rochester, N. Y.; Dr. Roswell Park and Dr. Charles G. Stockton, Buffalo, N. Y., and Dr. Richard B. Coutant, Tarrytown, N. Y.

PHILADELPHIA.

State Medical Examination.—The following is the result of the last annual examination by the State Board of Medical Examiners:

College.	Number examined.	Number failed.
University of Pennsylvania	121	2
Jefferson Medical College	38	4
Medico-Chirurgical College	20	4
Western Penn. Medical College	67	9
Woman's Medical, Phila	16	0
Baltimore Medical College	12	5
Baltimore University	5	4
Maryland Medical College	4	3
University of Maryland	3	0
Physicians & Surgeons, Baltimore	3	2
Miscellaneous	38	8

Suit for Maintenance of Indigent Insane.—A novel question of fact has been raised in the suit brought against this city by the trustees of the State Hospital for the Insane at Norristown. The suit is based upon a claim of $52,000, an unpaid balance for the care of indigent insane persons during 1896-97. The charge was $2.00 per person previous to 1899, when it was changed to $1.75. The defence of the city is that while $2.00 was paid during the years named, the actual cost of maintenance, according to the reports of the asylum, averaged $1.90 or less. This difference it is claimed will equal the sum demanded by the hospital. This raises the question as to whether claims based upon overcharges are to be admitted.

Free Hospital for Poor Consumptives.—This organization is now supporting 45 patients in city hospitals and in the Adirondacks. The managers have an opportunity to secure both a city home and a mountain site for a sanatorium at a cost of $10,000, and are endeavoring to raise this amount before January 1st. More than $1500 has already been subscribed. The President, Dr. Lawrence F. Flick, states that since 1884 there has been a steady decrease in the death-rate from consumption in Philadelphia, amounting in all to 33 per cent., and that under the most recent methods of treating this disease 75 per cent. of those in the first stage and 40 per cent. of other cases can be cured.

State Forests as Health Resorts.—Dr. J. T. Rothrock, General Secretary of the Pennsylvania Forestry Association, states in his annual report that "the condition of the forestry movement was never as strong as at present. The State is now in actual possession of more than 100,000 acres of land and is only second to New York. The Pennsylvania Forestry Association has been for years so intimately related to the State Board of Health that we have almost come to regard our work as part of a whole rather than two distinct things. We believe the sanitary influences of either the Hopkins reservation or the smaller one in Pike County are in all respects equal to those of the Adirondack region. We ask the cooperation of the State Board of Health in making known these facts and in enabling us to turn them to practical use in the treatment of our citizens who may be suffering with bronchial or pulmonary troubles. The Forestry Commission in the selection of land for the State reservation have constantly had in mind the possible usefulness of the ground as a source of supply of pure water for our towns and cities." Dr. Rothrock believes that trained foresters should be employed and that there should be a warden for each 5000 acres of land owned by the State.

Pennsylvania Hospital Clinics; Operative Treatment for Cirrhosis of the Liver; Chorea.—Two interesting cases were reported December 12th, post-mortem specimens from one being shown by Dr. A. V. Meigs. Drs. F. A. Packard and R. G. Le Conte spoke of the medical and surgical aspects of the cases. Both cases were operated upon early in October by Dr. Le Conte,

adhesions of the liver and spleen to the diaphragm and of the omentum to the liver and parietal peritoneum being caused by irritating the surfaces with gauze. One patient died within five days of uremia. The other, a man, sixty-three years of age, lived until December 6th. Dr. Packard considered this case a typical one for operative intervention for two reasons: First, the ascites was pronounced, tapping being necessary at increasingly-frequent intervals; second, there was no evidence of relief by the systemic circulation, the veins of the abdominal wall not showing enlargement. The operation, *per se*, was a success, four very large distended veins appearing on the abdomen after a time and the ascites being practically eliminated; but the patient developed typical symptoms of a toxemia of internal origin and finally died. The post-mortem showed a cirrhotic liver and adhesions as stated. Dr. Packard said that operative treatment in these cases offers but little hope of effecting a cure. Toxemia is almost sure to develop sooner or later when the portal circulation is diverted. All the organs of the body are in poor condition in these subjects and do not bear well the operation or the changed circulation. Cases should not be reported as cured within a few weeks or even a few months after operation, as the toxemia may be of slow progress.

Dr. J. C. Wilson recently showed a child suffering from chorea, who had been treated in the hospital one year previously for the same disease. At that time this case and another child having the same affection were in adjoining beds. One was given Fowler's solution, the other compound tincture of cardamom, the rate of recovery being about equal in both cases. The child which was given arsenic has returned, the other so far as is known having had no recurrence. Tincture of cardamom is now being used. Dr. Wilson mentioned these cases as showing that rest in bed is probably of more value than medication.

County Medical Society; Lymphatic and Portal Infections Following Appendicitis.—At the meeting of December 12th, Dr. John C. Munro, Surgeon to the Boston City Hospital, by invitation read a paper upon the above subject. Dr. Munro has met with an unusually large number of cases of infection following appendicitis, his paper embodying the report of many of these cases. The subject is of great interest and importance to the general practitioner, as well as to the surgeon. As the cases of appendicitis that come under the care of Dr. Munro are carefully studied, they constantly add to the evidence of lymphatic and portal involvement due to this disease, the symptoms being chills, tenderness, spasm of muscles, jaundice, etc. Clinically, the involvement is generally retroperitoneal and when openings are made in such cases of lymphatic infection, inflammation and pus are found. The process may lie dormant for a long time, one case developing pain, tenderness, spasm of muscles, etc., eighteen months after an attack of appendicitis. These infections may subside under medical treatment, but it is much better to evacuate the pus. An exaggerated febrile movement before operation, or its persistence afterward, suggests lymphatic involvement. Some of the conclusions reached by Dr. Munro after a study of the cases reported are: (1) Portal infections are by no means rare and are not positively fatal; their severity does not depend upon the degree of appendicular involvement; (2) the process may be a chronic one; (3) lymphatic ones are more common than portal infections; (4) mild cases of both may yield to medical treatment; (5) spasm and tenderness of the posterior muscles, as the quadratus, lumborum, point to retroperitoneal infection; (6) drainage affords satisfactory relief; (7) free incision, especially in portal infections, is always better than aspiration.

Dr. H. A. Hare spoke of the anatomy of the appendicular region and of the favorable circumstances thus afforded for a spread of infection by both blood-vessels and lymphatics. Cases were cited in which chronic colitis was due to irritation of the bowel by appendicular discharges. Also other cases presenting gastric symptoms, such as pain soon after eating, etc., which had been diagnosed as gastric ulcer and finally proven to be infectious from pus in the appendix.

Dr. John G. Clark spoke of experiments which he has conducted with regard to the lymphatics of the peritoneum. Carmine granules injected into the peritoneal cavity of rabbits were found in the circulation five hours afterward. The absorption was through the central tendon of the diaphragm into the retrosternal tissues, although the rabbits were kept upright, no absorption from other parts of the peritoneum being proven. A surprising result was the early finding of these granules in the marrow of the femur. The results would point to the advisability of thorough flushing of the abdominal cavity and leaving in a large quantity of fluid after operation.

CHICAGO.

Favor Reelection of Dr. Egan.—At a recent meeting of the Chicago Medical Society a resolution was adopted urging the reelection of Dr. James A. Egan of Springfield, Ill., as Secretary of the State Board of Health.

Appointment of Dr. Leininger.—The appointment of Dr. George Leininger as the Coroner's chief physician has been announced. He will receive a salary of $2500 a year. He succeeds Dr. E. P. Noel.

To Amend Pharmacy Law.—The Illinois Pharmaceutical Association will ask the Legislature at the coming session to repeal Section 8 of the Pharmacy Law of Illinois. This Section permits the State Board of Pharmacy to allow certain merchants in certain parts of the State to sell patent medicines. It was declared unconstitutional by the Supreme Court of Illinois. Com-

mittees have been appointed to look into the revision of the U. S. Pharmacopœia, another on legislation, a third on trade interests, and a fourth on the Board of Pharmacy records.

Memories of Children.—Investigation of children's memories by Professor F. W. Smedley, of the department of child-study in the public schools, may result in rearranging the schoolwork of the lower grades. If further investigation bears out the present conclusions, children will be taught as far as possible by sound. They will not be asked to learn by use of the eyes until they are older. After examining hundreds of children he has found that up to the age of fourteen or sixteen they remember best what they have heard. After that time sight impresses the memory more than sound. The application of the theory would relieve the eye-strain of young children. Professor Smedley's method of testing children for memory is to read them a series of figures, carrying the number as high as the memory will go. A child may repeat correctly such a number as 1,954,677 and fail if one more digit is added to it. He has found that in reading the figures children under fourteen almost always will remember a higher number than if it were shown them on a card for the same length of time. At the age of fourteen to sixteen the power of remembering through hearing begins to diminish and that of seeing to increase.

Ulcerative Endocarditis.—At a recent meeting of the Chicago Society of Internal Medicine, Dr. B. W. Sippy read a paper on this subject. Ulcerative or malignant endocarditis is in reality a general sepsis with localization of the infective process in the endocardium. It differs from verrucose or benign endocarditis chiefly in extent of pathologic changes and in severity of clinical manifestations. The disease appears either as an acute or a chronic affection. In the acute type the cardiac features may be completely obscured by the widespread localization of the infective process. In differentiating benign from malignant endocarditis the author considered the following points of great value: (1) Etiology and clinical course; (2) temperature; (3) appearance of the patient; (4) blood analysis, including bacteriological examination; (5) hemorrhages; (6) retinal changes; (7) size of spleen; (8) evidence of embolism. Under treatment, the value of prophylaxis, rest, tonics and antistreptococcic serum was considered.

C., M. & St. P. Railway Surgical Association.—This Association met at the Great Northern Hotel December 13th and 14th. Papers were read and discussed as follows: "Some Surgical Notes Gleaned in a Tour Around the World," by Dr. W. S. Caldwell, Freeport, Ill.; "First Aid to the Injured," by Dr. D. Macrae, Jr., Council Bluffs, Ia.; "Ossification or Calcification of the Eyeball," by Dr. Thomas McDavitt, St. Paul, Minn.; "Fracture of the Skull," by Dr. E. M. McDonald, Beaver Dam, Wis.; "Fracture of the Base of the Skull, with Report of Case," by Dr. D. N. Loose, Maquoketa, Ia.; "Fracture of the Jaw, with a Case," by Dr. J. H. Rockwell, Liberty, Mo.; "Fractures of the Lower End of the Radius," by Dr. Ira K. Gardner, New Hampton, Ia.; "Continuous Elastic Pressure in the Treatment of Fractured Patella," by Dr. J. H. Thornton, Lansing, Ia.; "Injuries to the Extremities," by Dr. J. N. Warren, Sioux City, Ia.; "Traumatic Hernia," by J. R. Hollowbush, Rock Island, Ill.; "The Surgical Aspect of the Ferguson Cyclone," by Dr. M. L. Allen, Tama, Ia.; "Gangrene with Cases," by Dr. E. O. Plumbe, Rock Valley, Ia., and "A Case of Brain Traumatism," by Dr. B. F. Dodson, Berlin, Wis.

New Plan for the Appointment of Internes.—The Democratic County Executive Committee recently took action toward changing the method of appointing internes in the Cook County Hospital. Applicants for such positions shall pass a competitive examination conducted by a committee of four physicians, composed of one eclectic, one homeopath and two regulars. The candidates who receive the highest marks are to get the places. The following resolutions were adopted by the Committee:

Whereas, Every two years a fierce contest has been waged for positions on the various medical staffs connected with the Cook County Hospital, and the said contests have engendered a very bitter feeling between the various medical colleges in this city; therefore, be it

Resolved, That the annual contest for positions as internes shall be open to any graduate of any medical school in Cook County. A committee of four, composed of one eclectic, one homeopath and two regulars, the members to be chosen by the respective attending staffs, shall examine on each subject. Each committee shall examine and mark the candidates' papers jointly, and the averages of the four examiners shall constitute the mark for any given branch. The subjects included in this examination shall be the following: Anatomy, pathology, surgery, physiology, medical diagnosis, eye and ear, chemistry, gynecology, skin and venereal diseases, histology and obstetrics. The twenty-four competitors receiving the highest averages in the above branches shall be appointed internes irrespective of the school to which they may belong, and their time of service shall be regulated by the attending staffs.

The number of successful candidates from each school annually shall determine the ratio of patients to be assigned to each staff for that year; that is, if of the twenty-four successful candidates seven be eclectic, eight homeopathic and nine regular, the distribution or allotment of patients shall bear this ratio in the assigning of work to the attending staffs; that is, seven patients to the eclectic staff, eight to the homeopathic staff and nine to the regular staff.

In materia medica and therapeutics a separate examination shall be given by a committee from each of the schools for its own pupils, and the markings of these committees shall be added

to the other averages of their successful candidates in order to determine the relative positions of the competitors from each school. Therefore, be it

Resolved, by the Executive Committee of the Democratic party of Cook County, That the Democratic members of the county board be and are hereby requested to further the objects of the above resolution by every legitimate means within their power.

GENERAL.

Scarlet Fever in the Carolinas.—Scarlet fever has spread over the middle and upper Carolinas. The Board of Health has closed every church in Seneca, prohibiting gatherings of all kinds. Last week Clement College was closed on account of the prevalence of the disease.

Obituary.—Dr. W. H. Jones, United States Navy, retired, died at his home, Bethlehem, Pa., last week of diabetes, aged sixty years. He entered the navy after graduating from the University of Pennsylvania in 1861, and was retired in 1893.

Typhoid Among British Troops.—A question in the House of Commons last week elicited the statement that there had been 15,625 cases of typhoid fever among the British troops in South Africa, and that of this number, 3642 proved fatal.

Gift to Aberdeen Infirmary.—Lord Mount-Stephen (formerly President of the Canadian Pacific Railroad) has given £25,000 to the Provost of Aberdeen, for the purpose of clearing the Aberdeen Infirmary of debt.

Professor Abel Injured.—Dr. John J. Abel, Professor of Pharmacology in the Johns Hopkins University, was painfully injured on Tuesday night by an explosion. He is now confined to the Johns Hopkins Hospital and there is grave concern about his eyes.

American Medical Association Prize.—The Committee on Scientific Research of the American Medical Association desires to announce that it has available the sum of five hundred dollars for the assistance of researches to be undertaken in the next six months, and that the money will be appropriated if applications be received within the month of January, 1901. Applicants should state clearly the character of the research to be undertaken, and the facilities at their command, addressing Dr. H. C. Wood, Chairman, 1925 Chestnut Street, Philadelphia, Pa.

War on Absinthe in Paris.—The Chamber of Deputies adopted unanimously December 10th M. Vaillant's resolution calling on the Government to prohibit the manufacture and sale of all alcoholic liquors pronounced dangerous by the Academy of Medicine. The resolution is aimed at absinthe, the consumption of which has nearly doubled in France since 1894, and now stands at 10,000,000 liters (nearly 6,000,000 quarts) annually.

Smallpox in Michigan.—State Inspector Johnson, representing the State Health Board, has returned from Custer, Mason County, Mich., where a large number of alleged cases of chickenpox have developed. Every case was diagnosed by Johnson as smallpox, and a number of them are virulent. Merchants in whose homes patients are suffering have been going to and from their places of business and every one has been exposed, including many from the country. There are over 100 cases of smallpox at Custer, out of a population of only 300. Strict quarantine has been proclaimed against the village, and there is some talk of a shotgun quarantine on the part of surrounding towns.

Women's Hospital for Canada.—A movement to formulate a scheme for the maintenance, in connection with the Women's Medical College, of a Women's Hospital for Ontario, in which all the operations shall be performed by women surgeons, and the resident physicians shall also be women, is being actively developed. A number of the women doctors of Toronto say that similar hospitals are very popular in the United States, and the mortality in one, in Boston, is very low. It is proposed to get twenty-five-cent. subscriptions for the work from the women of Ontario.

Food Laws of Michigan.—Food Commissioner Grosvenor of Michigan boasts in his annual report, just received, that no State is freer from injurious adulterations of food than is Michigan, that no State has better laws on the matter, and that nowhere are such laws more energetically enforced.

News Items Concerning Third Pan-American Medical Congress.—The Organization Committee has postponed the meeting of the Third Pan-American Medical Congress until February 4, 1901. It will be held from that date until the 7th inclusive. All literature pertaining to the Congress is in Spanish, but occasional news items will be sent to the weekly journals. Delegates can go either by the land routes, which are all *via* Florida, or by the water route from New York. Full particulars concerning these routes, excepting that of the Ward Line steamer from New York, will be found in the *Journal of the American Medical Association* of November 3d. Those coming from south of Washington and west of Pittsburg will probably select the Florida route, while those from the northeast will find the Ward Line more convenient. The steamer "Seguranza" of the Ward Line leaves New York January 30th, arriving in Cuba on February 3d, the day before the beginning of the Congress. The new Ward Line steamer "Morro Castle," holding 135 cabin passengers, leaves Havana on February 9th, reaching New York February 11th. The round trip, everything included, is $60.00. Any one going *via* this route will be absent from New York twelve days. Any of the delegates going down by the Ward Line, who de-

sire it, may by a supplementary payment of $25.00 return *via* Santiago. This trip will take from ten to twelve days, during which time the passengers live on the ship, and have their meals there if they desire. The party goes from Havana by rail to Cienfuegos in one afternoon, there taking the steamer to Santiago, and from Santiago to Nassau, in the Bahamas, and from Nassau to New York. The stay in these different ports will be for a day or more. English-speaking members of the Cuban Reception Committee will meet all steamers on their arrival in Havana and escort the delegates to the hotels assigned to them. The best hotels in Havana are the Telegrafo, Mascotte, Inglaterra and Pasaje. Rates $3.00 to $5.00 a day. The Entertainment Committee, appointed by the City Council of Havana, for the purpose of making it pleasant for the delegates during their stay, have arranged a program which, although as yet not fully determined upon in every detail, is nevertheless one which adds an attractive feature to the meeting. There will be a large ball given at the Tacon Theatre. This will be under the management of a sub-committee and an auxiliary ladies committee. The Committee is sparing no pains to make the ball the great social feature of the week, and one that will be most enjoyable, not only to the delegates, but also to any ladies in their parties. (There will be a banquet given at the same place.) On another day an excursion will be made to the sugar plantation of Mr. LaCoste near Havana on three Government transports. On arriving there the delegates will be shown the manner of growing sugar-cane, gathering it, grinding, cooking and refining the sugar derived therefrom, points of interest connected with the method of making sugar, and life on a sugar estate. Refreshments will then be served, either on the estate, or on the transports returning. These transports will be so arranged for the guests as to give the greatest amount of comfort and pleasure during the trip. On another day there will be a parade of the police and an exhibition of the fire companies, in which they will show the propmtness and skill with which they combat any fires taking place in the city. Receptions will also be given by various officials, and private dinners by numerous Cuban physicians to the delegates with whom they are acquainted. The three general sessions of the Congress at which papers of general interest will be presented and addresses delivered by official representatives from the different countries, will be held at the Tacon Theater in Havana. The section meetings will be held in the University on the first floor, and on the first and second floors of the Institute. The delegates from Mexico are at present in the lead, and a large number of abstracts have been received from them. Mention will here be made of the names of the presidents of the different sections, all Cubans, as the presidents are representatives of the country in which the Congress takes place, and the secretaries for the United States. All communications and titles of papers should be sent to the United States Secretary of the Section covering the subject, or to the Associate Secretary for the United States of the Congress, Dr. Ramon Guiteras, 75 West 55th Street, New York. A preliminary program will be published shortly.

CORRESPONDENCE.

ETIOLOGY OF YELLOW FEVER.

RIO GRANDE DE SUL, December 12, 1900.

To the Editor of THE MEDICAL NEWS:

DEAR SIR:—I purpose once more to avail myself of your courtesy in asking you to publish the following lines:

In my communications on the etiology of yellow fever (made to the Academy of Medicine of Rio Janeiro at the sessions of May 6th and June 3, 1897), in connection with which I have conducted experimental investigations dating back to 1895, I have made the following statements: (1) Yellow fever is a germ disease; (2) the specific agent is found chiefly in the gastrointestinal apparatus and in the spleen; (3) the existence of the bacillus in the blood can only be demonstrated in some cases at the approach of death and post-mortem; (4) besides the fatty degeneration of the liver, which has always been recognized as one of the lesions of the disease, the nutmeg type was found in animals dying of experimental infection; (5) starting from the specific bacillus, it is possible to prepare a therapeutic serum, at once curative and prophylactic.

It is of public notoriety that my applications of serumtherapy, which were crowned with success in the hospital of S. Sebastian at Rio de Janeiro in 1896 and 1897, were made before Prof. Sanarelli had made known his *bacillus icteroides.*

Later, my experimental investigations enabled me to demonstrate that the bacillus of yellow fever is merely a form of the *bacillus coli communis* developed in special life condition.

In his publication, Sanarelli recognizes yellow-fever infection only by way of the air passages; he denies that the bacillus may be found in the gastrointestinal apparatus; he admits that the bacillus may sometimes be found in the blood of patients; he directs attention only to the ordinary fatness of the liver which he compares with that produced by phosphorus poisoning; and, finally, he presents his bacillus as a new microbe.

The outbreak of plague in Brazil inspired a visit to Rio de Janeiro by Prof. Camille Terni, director of the Bacteriological Institute of Messina, Italy. During his residence in Rio this learned bacteriologist has applied himself to the study of yellow fever.

In a conference on this subject, held April 10, 1900, he has established the following: (1)

The *bacillus icteroides* is found chiefly in the gastrointestinal apparatus; (2) in his opinion, it is by this channel that the infection of yellow fever occurs; (3) the bacillus is never found in the blood of the patient; (4) besides the ordinary fatty degeneration, the yellow-fever toxin induces in animals the development of the nutmeg liver.

As you see, the agreement could not be more complete. It is corroboration that establishes the value of scientific investigations. I attach the greater importance to the declarations of Prof. Terni for the reason that he was unaware of the results of my labors, which were, I believe, carefully concealed from him.

The question remains whether or not the *bacillus icteroides* is a form of the *coli communis*. Some day the bacteriologists will give a definite answer and it will then be seen on which side the truth lies.

However it may be, the researches of Prof. Terni strongly confirm my teachings as to the etiology of yellow fever, which I was the first to establish experimentally.

With my thanks, Sir, please accept the assurance of my most distinguished sentiments.

PHILIPPE CALDAS.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, December 10, 1900.

ALLEGED DEATH FROM THE USE OF THE ROENTGEN RAYS—AN OUTBREAK OF DIPHTHERIA AT CAMBRIDGE CHECKED BY PROMPT MEASURES OF ISOLATION AND PROPHYLACTIC INJECTIONS OF ANTITOXIN—CURIOUS CASE OF TRANCE AT NEWCASTLE—FORECAST OF THE REPORT OF THE HOSPITALS COMMISSION—EXONERATION OF THE MEDICAL CORPS, BUT FAILURE TO PLACE THE RESPONSIBILITY ON THE MILITARY AUTHORITIES—THE DIET OF THE POOR—PROPOSAL OF EDINBURGH PHYSICIAN TO INSTRUCT THEM IN DIETETICS—ARSENICAL NEURITIS OUTBREAK AT MANCHESTER.

A CASE in which death appears to have been due to the use of the Röntgen rays—the first on record—has just been the subject of a coroner's inquest: A woman, aged sixty-eight years, sustained an intracapsular fracture of the neck of the femur on March 21st. To ascertain precisely the injury a skiagraph was taken on April 7th, and as this was not satisfactory another was taken on April 27th. A ten-inch coil and a five-and-a-half-inch spark were used. The photographer asserted that time of exposure was respectively 35 and 45 minutes, but a niece of the deceased alleged that the exposures lasted two hours and two hours and ten minutes. After the first exposure nothing unusual occurred, but after the second the patient complained, on May 4th, of irritation in the lower abdomen and a rash appeared on the following day. The inflammation terminated in gangrene and a slough six inches in length and three inches in breadth formed. The slough was cast off and the surface became healthier, but the ulcer never healed. The patient died on November 5th. At the necropsy the heart was found to be flabby and thin. The fracture had not united. The cause of death was not found in the internal organs. The medical evidence was that death was due to exhaustion from shock, the result of fracture of the femur and exposure to the Röntgen rays. The jury returned a verdict to the effect that "the deceased met her death from shock and exhaustion following the accident and the effects of the Röntgen rays on a weakened system; no blame is attached to the doctor or the photographer." Mr. Lewis Jones, medical officer of the electrical department of St. Bartholomew's Hospital, who was called as a witness, said that he considered the time of exposure reasonable and that the prints were good photographs. The risk of a burn was always present. He had never seen or read of a death caused by the Röntgen rays.

An outbreak of diphtheria which occurred in Cambridge in a population of 50,000 shows the value of antitoxin injections as a preventive. The first case occurred on October 14th and the last on November 15th. In all there were 60 cases in 5 weeks. Nine cases occurred in one school. The school was closed and Prof. Sims Woodhead of the University was requested to act as consulting bacteriologist. The infants attending the school were visited at their homes, bacteriological examinations were made, and prophylactic injections of antitoxin were offered to them. These were accepted in the majority of cases. Antitoxin and a bacteriological examination were placed at the disposal of all doctors for their poorer patients. Four cases, the first of which was traced to the above-mentioned school, occurred in three other schools. These were closed and the children and their young brothers and sisters were examined and offered a preventive injection. Circulars were sent recommending the closure of Sunday-schools. A home was opened for those children in whose mouths suspicious bacilli were found. Here about 30 children who could not be satisfactorily isolated at home were sent. A circular was sent to medical practitioners asking them to keep their patients and suspects under supervision until 3 consecutive bacteriological examinations of their throats had been made. During the outbreak the daily notifications of cases of diphtheria rose as high as 9. The value of the preventive injections is shown by the fact that only one slight case of diphtheria occurred among those treated, although many of them were found to be harboring the diphtheria bacillus, while among the elder members of their families, who had not been treated, many cases occurred.

A curious case of trance is now under observation at the Royal Infirmary, Newcastle, in which the patient, a young man, aged twenty-six years, has been in a state of profound stupor for seven months. He is a clerk who has always been re-

garded by his friends as of a reserved nature, depressed and eccentric. Last March he became unconscious. Up to a few days ago he has made no movement of his voluntary muscles nor showed any knowledge of his surroundings. At night his eyes close in the ordinary fashion of a man going to sleep; they open in the day, but are devoid of intelligence or expression. Even under the strongest electric currents he made no movement. Owing to abstention from food he became "a living skeleton." For some time life was maintained by injections, then he was fed with the stomach-tube, and later he was able to swallow reflexly fluid placed in his mouth. He had been in the Infirmary five months when he first displayed any sign of intelligence. One of the nurses informed him of his brother's death. Tears fell from his eyes, but in no other way did he indicate that he heard the intelligence. One morning he muttered the name of the doctor who stood by his bedside. This was remarkable for the name had not been mentioned in his presence for a considerable time, which pointed to the fact that he was not so oblivious to his surroundings as was supposed. Two months ago food was given to him in the ordinary way and he gradually began to recognize, as far as could be judged by his expression, his surroundings. He was still speechless and motionless. He can speak slightly now, but his utterance is limited to the monosyllables "yes" and "no." He has also begun to move slightly his hands.

An intimation has been made that the report of the Hospitals Commission will be practically a vindication of the Army authorities. Some defects and evils will be admitted, accounts will be described as exaggerated, personal narratives will be declared to be imperfect and unreliable, and the Medical Corps will be complimented on the energetic way in which it combated enormous difficulties. There have been inexcusable neglect, needless suffering and fatalities, avoidable epidemics, and insufficient nurses, necessaries, and comforts—but not in all the hospitals. The Medical Corps was not responsible for these things, for the transport was not under them, but under the local commanders. The absence of necessary beds was not always traceable to anybody. The Government at home sent out the beds, stores, etc., but many of them never reached their proper destination. Hundreds of soldiers died of enteric fever who never ought to have had it at all. They died, in camps to which they never ought to have been sent, from want of proper care and food. The pressure was too great and no attempt seems to have been made to prevent the heavy loss that resulted by such instructions from home or such hearty cooperation between military and medical authorities on the spot as would have been effective. Military exigencies received every attention, hospital exigencies were not promptly dealt with. But the result of the Commission is not satisfactory. The Commissioners seem to have begun their inquiry as if they were investigating a definite charge against a definite body and one so inherently improbable as to give them a strong bias in favor of the accused. The result was foreseen. The Medical Corps is acquitted of inhumanity with which it was never charged. It is said to have made the best of the means at its disposal which was never challenged. But the failure to make the proper arrangements must rest on the War Office and the generals in command. The Commission might have ascertained this instead of merely acquitting the Medical Corps, which is all it appears to have done.

A very valuable piece of work has been done by four Edinburgh physicians who have investigated what the poor eat. Their report was presented to the Royal Society of Scotland by Dr. Noel Paton. Choosing a number of typical families at three wage-rates they kept for some time a record of their expenditure on food and of the kind of food bought. Class 1 was of families with irregular incomes, generally under 100 shillings a week; Class 2 of families in receipt of 110 shillings a week regularly; Class 3 of families earning 150 shillings a week and over. In Classes 1 and 2 the amount of food taken was ascertained not to be sufficient for the demands of the system, not enough to produce the energy required by adults or growth in children. The deficiency was 15.7 per cent. Always below par, these classes are unable to emerge from the state of life in which they find themselves, and, of course, they frequently collapse. Whether the collapse is moral or physical in aspect, poor feeding is a contributory cause. In a large measure poor feeding means improper feeding. The wrong kinds of food are eaten or the right kinds in wrong proportion. In the discussion which followed Sir J. Batty Tuke said that the weekly cost of food per head in the lunatic asylums was 64 cents, while a husband, wife and four children lived in the slums at a food-cost per week of 62 cents. If people of this class could be taught to observe a dietary they would have nothing to spare. After paying for food and rent the family has only 28 cents left with which to pay for clothing, fire and light for a week. There is no hope of tutoring these people in what calls for moral stamina. They are what they are from the weakening of moral stamina—hereditary and immediate—and with that, of course, physical stamina, for the two are in a broad sense inseparable. But among them there is always a proportion of merely unfortunate families of a better class, victims of the accidents of life and capable of rising. It is suggested that for the benefit of these and of the stronger artisan class above them instruction in dietetics should be given.

The outbreak of arsenical neuritis from contaminated beer is continuing to exercise great concern in the country about Liverpool and Manchester. The brewing industries are for the time being paralyzed. Many persons refuse to drink beer of any kind, and the temperance society workers are reaping a rich harvest of converts to the blue ribbon.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

FRACTURES OF THE JAW—PUERPERAL INFECTION—EXTIRPATION OF THE HYPOPHYSIS CEREBRI—MORPHOLOGY OF THE STAPHYLOCOCCUS ALBUS—PROSTATIC SECRETION—ERYTHEMA EXUDATIVUM MULTIFORME—AN INVALID'S KITCHEN—DIVERTICULUM OF THE URETER—INVAGINATIO ILEOCOLICA—OLLIVER'S SYMPTOM—RAILWAY ACCIDENTS AND THE NERVOUS SYSTEM.

WARNEKROS, at the Berliner medicinische Gesellschaft, October 17, 1900, lamented the fact that too little attention in lecture, in text-book and in private practice is given to the important aid the dentist may render in making dental supports in fractures of the jaw. Most of the treatises still commend the old-fashioned fixed splints, whereas almost any dentist can mould and apply the wire splints of Sauer. The author on many occasions has adapted such to the teeth and moulded rubber externally, thus giving a removable and sterilizable splint which will permit considerable chewing. So great is the value of these methods that it would be well to attach a dentist to every regiment, who in war would often be needed and even in peace could frequently render valuable aid.

C. ABEL, at the meeting of October 31st, gave the following points relative to puerperal septicemia. There must be a certain number of unavoidable infections during some operations, but the death of from four to five thousand women annually in Germany of puerperal sepsis is appalling. The condition may be advisedly considered after the procedure of Prochowinck on bacteriological grounds, with considerable practical importance, as patients with systemic or local infection, either predominant over the other. In the latter class of case manual dilatation and removal of placental debris are always necessary. Lysol douches are not always advisable. Removal of the diseased uterus is rarely justifiable because so many patients recover without it. Boiled normal salt solution and oxygen-inhalations are of very great value. Local parametric and perimetric abscesses demand free evacuation. The injection of streptococcus serum or of turpentine to cause local aseptic foci is not good practice.

MAAS, at the meeting of October 24th, described the results of removing the hypophysis cerebri, the relation of which to acromegaly has been stated. After many attempts, in company with Friedmann, he succeeded in totally ablating it. No visible effect during months of life after it and no evident pathological changes at autopsy were found. The experiments had served little in determining the function of the organ, perhaps because some other viscus undertakes it vicariously. It seems likely that this is not the thyroid gland. Friedmann briefly stated the operative method, namely, through the pharynx and sphenoid bone.

SAUL, in speaking of the staphylococcus albus, said that the puncture-culture is really an artificially determined growth. If, on the other hand, instead of the agar-plate, which so soon dries out, fluid agar is taken, which later stiffens, a characteristic tree-like growth after several weeks, which will furnish a definite means of diagnosis, is found. The cocci in the branches are more or less fluidified by necrobiosis, while such as constitute the so-called leaves of the culture-tree are distinct.

LOHNSTEIN, at the Verein für innere Medicin in Berlin, October 15th, said that he has examined the chemical reaction of the prostatic fluid in a large number of subjects who are the victims of chronic prostatitis. In the majority the reaction was acid, in the minority alkaline and in a very few neutral. This chemical feature of the secretion is without visible effect on the life and activity of the spermatozoids.

HELLER repeated the fact that many writers have noted a relation between disorders of the genito-urinary and the gastro-enteric systems on the one hand and erythema exudativum multiforme. So pronounced is this condition that some have tried to produce the latter disease by provoking such causal disorder. Thus, Lewin by irritation of the vagina and urethra with oil of savin or silver nitrate regularly caused the skin lesion in one of his patients. Heller had a man under his care who after repeated marital coitus used an injection of creolin. A violent chemical irritative urethritis followed, with a copious purulent discharge, in which no trace of gonococci could be found. Very shortly an active erythema exudativum multiforme appeared, the course of which was completely parallel to that of the urethritis, both declining and after several weeks disappearing together. The recovery was complete.

VON LEYDEN, at the meeting of October 29th, described the newly-erected "Krankenküche," (Invalids' Kitchen), a recent philanthropic venture, aiming to provide good diet for the sick among the poor primarily and secondarily to sick travelers without family ties and such aid from that source. There are seven forms of diet supplied at the lowest possible cost with a small fee for delivery beyond a radius of two kilometers. The food is carried in suitable heating apparatus. The diet-list is as follows: (1) One-half liter of bouillon and a piece of chicken for 25 Pf. (6cts.) (2) One liter of soup and meat with vegetables or potatoes for 50 Pf. (3) Various soups at choice, meat with vegetables or potatoes or compot for selection, at 75 Pf. (4) Chicken and meat soup or the like; broiled or boiled meat with vegetables or the like; light sweets, 1 M. 25 Pf. (5) Similar but larger variety, 2 M. (6) Single portions from a menu, as meat and chicken, 80 Pf.; vegetables, 40 Pf.; sweetmeats and jellies, 75 Pf. to 1 M. 25 Pf. The institution tries to sell the food at the cost of the preparation of it and the management of the place.

LIPPMANN-WULFF exhibited a specimen of a ureteral diverticulum taken from a woman, observed during life and previously reported by him

in the *Centralbl. f. Erkr. d. Harn-und Sexual Organe* and finally confirmed at the autopsy. Fifteen years ago the woman's left kidney was removed and a few years later the right kidney was movable and had to be anchored into place. Then bladder symptoms developed and on cystoscopical examination a bulging forward into the bladder space was apparent at the terminus of the ureter, which led to the diagnosis of diverticulum of that viscus.

Schmilinsky, at the Aertzlicher Verein in Hamburg, October 16th, presented a specimen of invaginatio ileocolica. During life the patient presented to the right of and above the umbilicus a rather large tumor, crescentic, with a prolongation about as thick as the thumb into the transverse colon and having a tendency to harden under palpation. In addition there were attacks of pain of variable severity and duration, inanition, vomiting and diarrhea during the colic. The technic of the operation was very difficult and soon after it death from suppurative peritonitis supervened.

Piza brought forward a specimen of *Primula oconica,* well known and used in house and table decorations, as the cause of exanthemata in people concerned in the cultivation and sale of the plant. Although the treatises on dermatology make mention of this plant as one of the existing factors of dermatitis, the average practitioner is not fully aware of it. The form the skin lesion usually takes is that of an acute, follicular or vesicular eczema which is very troublesome in itching, especially at night and over the hands. The cause seems to be the contact of the fluid produced in the trichomes and secreted when the plant is touched. Individual disposition is very important. Gardeners and florists very commonly are the victims. Since this secretion is freely soluble in alcohol, disinfection of the hands and forearms in it is the best prophylaxis. The treatment of this obstinate dermatitis is on general lines.

Jessen discussed the value of the Olliver symptom by means of two preparations. The first specimen was that of a large, intrathoracic, aortic aneurism, probably due to a syphilitic aortitis. Olliver's sign was wanting. On the other hand, the second specimen was that of a diffuse mediastinal sarcoma. In this patient, owing to intrathoracic obstruction, there were apparent edema of the face and chest, pulsation over the manubrium sterni and asymmetry of the radial pulse. Thus the differential diagnosis was very difficult, until given by a metastasis in the right upper lobe. Hence it follows that Olliver's symptom is not sure proof of aneurism, but rather of some change in the space limits of the mediastinum.

Saenger reported his many recent observations of the immediate and remote effect on the nervous system of railroad accidents. Of thirteen patients hurt in 1897, six are now absolutely free from pain or other symptoms; four have slight neurasthenia, sleeping less restfully than previously, have occasional headache and some manifestations of anxiety; two boys have now less mental receptivity than before; and one patient has not been heard from at all. Out of fifteen soldiers injured in 1899, only one now manifests any nervous trouble and this is insignificant. Three railway employes who suffered really very slight injury have all shown marked hysterical manifestations. One engine-driver, badly injured, lost in fourteen days all signs of nervous damage, while another really less hurt showed a melancholic tendency. Severe neurasthenia afflicted one sentinel, probably through anxiety, although he was not hurt himself; similarly a brakeman was attacked through overwork. It becomes, therefore, apparent that in the majority of cases the remote results upon the nervous system are not so bad as have been previously taught. Very few have been rendered unable to earn their living. Not one presents the dreary traumatic neuroses of Oppenheimer, not one has shown the trophic skin- and hair-changes. Only four of the twenty lost consciousness at the time of the calamity, who with the two boys make but six in whom the cerebrum has been manifestly affected. In seven or eight was fear very much marked at the moment of the accident, the majority suffered from excitement after it. The most significant thing seems to be the greater severity of the hysteria and other nervous signs in the employees when compared with private citizens. In illustration there are those who suffered no bodily damage. It is likely that very trying service, loss of sleep and official responsibility were largely the causes. Added to these are the misuse of alcohol and tobacco and poor food which tend to induce early arteriosclerosis among the working classes. The final conclusion is that individual disposition, habits of life, condition of work, actual state of health as to chronic nervous and other diseases, are important factors in which may be found the cause of nervous disturbance as well as in the actual bodily damage.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, November 6, 1900.

The President, Frederick Peterson, M.D., in the Chair.

Paralysis Agitans Without Tremor.—Dr. M. G. Schlapp presented this case. The chief features were the rigidity of the muscles, the expressionless face, and the position of the arms, body and hands. The flexor muscles were more contracted than the extensors. There was no tendency to fall in any particular direction.

Paralysis of the Duchenne-Erb Type.—Dr. Schlapp also presented a man who, six weeks ago, had fallen from a bicycle, striking his shoulder. He had been unconscious for five hours. The case was interesting because the anterior

pectoral muscles were affected. There was complete degeneration reaction of the pectorals, biceps and the coracobrachialis, and it was incomplete in the triceps and supinators. There was a peculiarly distributed area of anesthesia showing involvement of the musculospiral and musculocutaneous nerves chiefly. The lower part of the pectoral muscle showed some slight response to the faradic current. The lesion evidently involved the fifth and sixth roots of the cervical plexus. As the anterior thoracic nerves are involved it is not a perfectly typical case.

Drs. C. L. Dana and M. Allen Starr said that they had each seen a similar case.

A Case for Diagnosis.—Dr. J. Fraenkel presented a man, forty years of age, a tailor by occupation, who claimed to have been well up to one year and a half ago. There was no family history bearing on his condition, nor was there any history of any previous acute trouble. About eighteen months ago the man had been pushed roughly off a street car. On awakening the next morning at home he had been absolutely helpless, being unable to move his upper or lower extremities. After six months he had been admitted to the Lebanon Hospital, but had left there, according to the history, unimproved. On coming under the speaker's observation, there had been noted at once the presence of an extensive eczema. On a second examination the shoulder-joints had been found partially ankylosed, and the muscles surrounding them appeared atrophic. There was also atrophy of the supraspinatus and infraspinatus, and slight atrophy of the serratus muscle. The electrical reactions were not changed. A thorough examination of his nervous system proved absolutely negative. There was a peculiar atrophic condition of the skin and a condition of cyanosis on the peripheral parts. There was slight valvular disease of the heart. The diagnosis seemed to rest between rheumatism, a general trophoneurosis and general syphilis.

Dr. B. Sachs said that he had examined this man previously and had been led to think of symmetrical muscular atrophies such as occur after arthritic processes. It was not usual, however, to have them quite so symmetrical. It did not seem to him to correspond to any of the dystrophies or any of the spinal forms of progressive muscular dystrophy. He had had a suspicion that the case might be one of leprosy.

Dr. M. Allen Starr said that when traveling in Norway some years ago he had seen a number of lepers, and had had his attention called to the existence of muscular atrophies in them. The peculiar appearance of the man's face had led him to think of leprosy without knowing Dr. Sachs' view on the case.

Dr. Fraenkel said that very careful inquiry had failed to elicit anything but the most positive statements that the man had been in perfect health up to the time of being thrown from the car. The man had come from the southern part of Russia. A dermatologist had seen the case and had been told that leprosy was suspected, but he replied that the thickening of the face was due to the previous eczema.

Dr. Schlapp said that Bechterew had described somewhat similar cases of "stiff back." There was a possibility of some of the roots being affected.

Dr. C. L. Dana thought this case was one of rheumatoid arthritis and the condition of the skin was the result of an eczema.

Dr. F. Peterson thought it was an anomalous type of chronic rheumatoid arthritis. The fact that the muscles reacted normally would tend to confirm this belief. It was certainly not a spondylose rhizomyelique. This might, of course, be a case in which the spinal cord symptoms were developed later.

Dr. B. Sachs presented the spinal column and the shoulders from a case of spondylose rhizomyelique. The heart also showed previous rheumatic disease.

Spasmodic Torticollis and Its Treatment.—Dr. W. M. Leszynsky read a paper with this title. He said that wry-neck must be classified among the musculonervous disorders. The first case reported was that of Mrs. X., thirty-six years of age, seen by him in 1895. About seven years ago she had suffered from pain and stiffness in the muscles of the back of the neck for several days. She had been greatly worried for a number of years by a protracted lawsuit. There was no family history of nervous disease. In February, 1895, after a fall on the ice, she had begun to suffer from nervous attacks, and in June she had first noticed a tendency of the head to turn toward the left. On examination she was found to be fairly nourished, but anemic. There was frequent and well-marked tonic spasm of the right sternomastoid muscle. Her eyes had been examined and found normal. Her general condition was that of neurasthenia of the lithemic type. She was advised to rest in bed for three months and was given the usual tonics. After two weeks atropine had been injected into the affected muscles, the daily dose being increased slowly up to 1/80 of a grain. At this time the symptoms of atropine poisoning had been so severe that it was discontinued. For a few days after this the spasm of the muscles was decidedly worse. The convulsive attacks lasted about twenty minutes, were very violent and were associated with marked impairment of respiration. Under the use of morphine and potassium bromide the paroxysms had gradually subsided in the course of two weeks. Subsequently various remedies had been employed, but without benefit. The urine was always acid and of high specific gravity. After four months there had been considerable improvement in her general condition but not in the spasm of the muscles. The rest treatment had been continued for some time longer under the advice of the late Dr. E. C. Seguin, but she had finally re-

belled and had gone home. Some months later a brace had been applied, and this had gradually controlled the convulsive movements. The brace had then been discarded, but some tonic spasm in the muscles had still continued. Although there had been no return of the clonic spasm there was still slight occasional tonic spasm of the upper segment of the trapezius muscle. This case pointed to a strong hysterical element, although the patient did not present the usual stigmata of this affection. There was undoubtedly also a lithemic condition.

The second case was that of a woman, twenty-four years of age, whom he had seen on October 24, 1897. At that time there had been a marked spasm which had existed for nearly eight months. She had suffered from migraine for a number of years, and there was no history of trauma. She had been kept in bed and the usual rest cure methods employed for two months. The atropine injections had been used for about two weeks, and they had temporarily controlled the spasm. They had been discontinued after two weeks. She had made a complete recovery at the end of six months, and had remained well since that time.

The speaker said that in 1884 he had recommended the use of atropine in this class of cases. Since then he had employed it in 12 cases, and had found that in many cases it was unsatisfactory, and he now believed it should be looked upon as simply an adjuvant to other measures. The prognosis depends upon the duration and the persistence of treatment. The principal therapeutic feature in every case should be the use of massage and the methodical education of the muscles and their coordinating centers. His attention had first been directed to this valuable method by Dr. Coggeshall of Boston. It was a mistake to resort to surgical measures in the early stages of this disorder.

Dr. C. L. Dana said that in his experience if the wry-neck were pretty closely limited to the spinal accessory and sternomastoid, an early resection would often check the disease and prove most useful. He quite agreed with the reader of the paper concerning the treatment of the older cases.

Acute Ataxia.—Dr. C. L. Dana read this paper, classifying acute ataxia as: (1) The acute bulbar and cerebellar ataxia; (2) acute spinal ataxia, and (3) acute peripheral ataxia due to multiple neuritis of the sensory type. He said that Ebstein had reported a case of acute ataxia with autopsy, and as patches of sclerosis had been found the case had been looked upon as one of multiple sclerosis in an early stage. The peripheral type includes those cases due to the sensory form of multiple neuritis. Up to recent times there had been no definite description of acute ataxia of spinal origin not due to tabes. In 1897 Dr. Strauss had, however, reported two cases occurring in men about thirty-four years of age without history of syphilis or other infection. The description seemed to the reader suggestive only of locomotor ataxia. The cases of acute ataxia first described by Leyden, and still referred to by him as acute bulbar ataxia, certainly had a strikingly characteristic clinical course, so that the name might have some clinical value. Special attention was called to five cases of non-tabetic spinal ataxia which were reported in the paper. The following is illustrative: A man of sixty on January 9, 1890, had begun to feel numbness in the feet, and in a few hours this had extended to the mid-dorsal region. He soon developed a tight sensation around the waist. Ten days later, on coming under observation, he had a staggering ataxic gait, and soon became tired. He could not stand with the eyes closed. He showed distinct loss of muscular sense, but no impairment of the functions of the rectum or bladder. The patient had gradually recovered, and was now well. In another case, that of a man, seventy-two years of age, syphilitic infection had occurred one year previously. Just after recovering from an attack of iritis he had developed a type of ataxia like that described in the preceding case. In two other cases the disease had been in old people, but in neither of them had there been a history of syphilis. They both were victims of overwork, and both had presented symptoms of marked senility. It would seem that these cases were due to senile arterial changes, or due to syphilitic changes in the blood-vessels of the spinal cord, causing hemorrhages or blocking of the vessels, or both. It was possible that in old age the syphilitic virus might lead to attacks on the posterior rather than on the lateral columns, so that the type would be ataxic rather than of the spastic paraplegic type. All of his patients had recovered from the ataxia. The differential diagnosis must be made from an acute onset of a locomotor ataxia.

Dr. Joseph Collins said that his clinical experience had been somewhat different from that of Dr. Dana, so that he had been led to a very different conclusion regarding the etiology. Some of his cases had been in persons of about forty-four years of age without evidence of syphilitic infection. Some times there had been inability to walk in the course of a week. This had been associated with slight incontinence of urine, at times, and with sexual impotence. In these cases there had been none of the cardinal symptoms of multiple sclerosis, and no evidence of cardiac or vascular degeneration. This was a type of case which he had been accustomed to call "acute ataxia." A second class of acute ataxias was acute bulbar ataxia. One of these was a woman, thirty-five years of age who, about August 14th, had begun to complain of dizziness and blurred vision. Shortly afterward, while dancing, she had become ataxic, and then had lain in bed for a long time with marked ataxia and with slight anesthesia of the face. The sense of position had been lost. Later, the symptoms of bulbar involvement—regurgitation

through the nose and bulbar speech—had appeared. The cases of acute ataxia with which he was familiar clinically were those presenting features similar to the ones reported by Dr. Sanger Brown of Chicago, recently, in the *American Journal of the Medical Sciences.* Dinkler had come to the conclusion that the lesion must be somewhere in the corona radiata or in the large basal ganglion.

Dr. Smith Ely Jelliffe said that he had had under his observation for three years a man, thirty-six years of age, who had been infected with syphilis. He was a politician, and at the crisis of a campaign he had suddenly found himself unable to walk. On either side there had been ataxia confined to the lower limbs, and associated with some trouble of the bladder. He had been put on antisyphilitic treatment, and had been practically well in three weeks. He had remained well for a year, and then had had a sudden attack which had resulted in a typical spastic paraplegia. He had eventually died from this, and his spinal cord had exhibited the usual lesions of that affection. In the first attack there had seemed to be an acute ataxia due to involvement of the minor blood-vessels.

Dr. Schlapp reported the case of a man of fifty, an intemperate longshoreman. Three years ago he had developed ataxia and now had a disturbance of tactile and pain sense in the feet. Electrical reaction was diminished. The case looked to him like a neurotabes peripherica. The Romberg symptom was present. The knee-jerks were slightly exaggerated. The case might perhaps be classed as an acute ataxia of the peripheral type.

Dr. Fraenkel said that from the pathological standpoint the condition probably occurred quite frequently, and was often overlooked. He would like some points on the differential diagnosis between organic and functional conditions. The symptoms given by Dr. Dana were not sufficiently objective.

Dr. J. F. Terriberry commented upon the fact that these old people reported by Dr. Dana should have recovered so readily if the vascular system had been so damaged. For this reason he doubted if the vascular system had been especially at fault. Ataxia was a symptom rather than a disease, and the attempt to consider it as anything but a symptom was likely to lead one astray. He was in favor of considering these cases that recover late in life as of neuritic origin.

Dr. Dana said he had not met with the class of cases described by Dr. Collins. Dr. Brown's cases did not seem to be exactly cases of pure ataxia, and hence he had not referred to them. One must distinguish between an ordinary unilateral ataxia such as occurs from acute softening of the pons or medulla and the acute bulbar ataxia of Leyden, which is bilateral. It was a common experience to see old people with hemiplegia and hemorrhage recover in spite of the degenerated condition of the blood-vessels.

BOOK REVIEWS.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B.A., M.D., LL.D., Professor of Surgery in Cornell University Medical College; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's and Christ Hospitals. Third Edition. Lea Brothers and Co., New York and Philadelphia, 1900.

THE necessity of publishing a third edition of this valuable book so soon after its almost complete revision in 1899 has given the author an opportunity to bring this volume up to the latest date. Even in so brief a time important advancement has been made in our knowledge of fractures and dislocations, especially in regard to traumatic hematomyelia which is most clearly and fully discussed in the present volume. Nearly all the ordinary lesions are illustrated by beautiful reproductions of X-ray photographs, which now constitute such an important aid in the diagnosis of all bone deformities and displacements. In the 1899 edition the chapters on fractures were almost entirely rewritten and revised, and notable changes made in the treatment of old dislocations. This book now embodies a most complete and comprehensive discussion of the subject of fractures and dislocations and deserves more than ever the reputation, which it has held for some time, of being the best recognized authority upon the subject published in the English language.

Malaria According to the New Researches. By PROFESSOR ANGELO CELLI, Director of the Institute of Hygiene, Rome. Translated from the Second Italian Edition by JOHN JOSEPH EYRE. Longmans, Green and Co., New York, London and Bombay.

IN the Introduction to this work Dr. Manson of England says that it is due to the masterly work of the Italian school that most of our knowledge of malaria has been gained. The researches of Marchiafava, Celli and Bignami opened up the way to the splendid work of Ross of two years ago, and this selfsame Italian school was the first to confirm his work, to extend it and to throw themselves with energy into the indicated hygienic measures.

With reference to the work itself, it is not too much to say that it is, of the shorter monographs, one of the best that has been published. The history, economic consequences, etiology, sources of infection, life of germs in the environment, vehicles of infection, path of penetration, etc., are considered under the general heading of Epidemiology. Part II., on Prophylaxis, discusses the means of prevention, first concerning the cause itself and, secondly, those means which are directed against the predisposing causes.

As a thorough, up-to-date and readable summary of our present knowledge of malaria the work can be most cordially recommended.

Diseases of the Eye, Ear, Nose and Throat. A Pocket Text-Book of Diseases of the Eye, Ear, Nose and Throat, for Students and Practitioners. By WILLIAM L. BALLINGER, M.D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, etc., and A. G. WIPPERN, M.D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. Lea Brothers & Co., Philadelphia and New York.

THIS series of manuals forms a good index of the modern advance in medical book-making. While compendiums were notably careless in their make-up some years ago, these are models of the best book-making. The illustrations are clear, well reproduced and really illustrate. The colored plates are artistic reproductions of important anatomical preparations. There is but one fault to find with the book and that is that its 500 odd pages of matter on heavy paper should be crowded into a cloth binding. The contents of the book fit it eminently for frequent consultation and it would seem that for this purpose these pocket text-books should be bound in some more durable material.

The work of compression necessary to present such large special subjects as the eye, ear, nose and throat in a small compass to the general practitioner is very well done. The chapter on Retinoscopy, for instance, is a model of clearness, although contained in less than five pages of the book. The determination of the hearing capacity by various methods is very practically discussed and in a manner that cannot fail to be of great help to the busy practitioner who sometimes finds himself in the necessity of determining the quality and range of the hearing power. This dictum, for instance, is a sign of the practical and conservative attitude adopted, no matter what amount of improvement.

The chapter on Diphtheria is notably good, as is also the treatment of various pathological conditions connected with all the tonsils. There are necessarily signs here and there of the compression that had to be practised in order to bring the extensive subject-matter within the scope of a book of this size, but it is difficult to see where and how this little text-book could have been improved.

Practical Urinalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons and Students. By CHARLES W. PURDY, LL.D., M.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Fifth Revised and Enlarged Edition. With Illustrations, Including Photo-Engravings and Colored Plates. Philadelphia, New York, Chicago: F. A. Davis Company, 1900.

IN this volume the author bridges the gap between the purely clinical aspects of urinology as it is treated of in works on medicine and the descriptions of chemical reactions and technical manipulations forming the main bulk of books on urinalysis *per se.* The clinician and the chemist are placed on common ground and their joint knowledge combined in a way that cannot but be helpful to the student and of service to the practitioner for reference. A notable feature is the beautiful way in which the author has elaborated the subject of centrifugal analysis, and it is mainly to his exertions that we are indebted for practical working methods for determining by this means the quantities of chlorides, phosphates, sulphates and albumin in urine with a degree of accuracy equal to that of any method and at an enormous saving of time. The significance of this is apparent when it is known that by the use of the centrifuge and the author's tables a fairly complete analysis of urine, both quantitatively and qualitatively, may be made in from twenty minutes to half an hour, while formerly it took twenty-four hours' time. The section on urinary diagnosis is equally complete and valuable and presents logically systematized information which to obtain otherwise would require a search through many volumes. In this, the fifth revision, much new matter has been added and a book produced that deserves unqualified praise.

BOOKS RECEIVED.

A MANUAL OF MATERIA MEDICA AND PHARMACOLOGY. By Dr. D. M. R. Culbreth. Second Edition. 8vo, 881 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $4.50.

MALARIA ACCORDING TO THE NEW RESEARCHES. By Dr. Angelo Celli. Translated by J. J. Eyre, M.R.C.P. 8vo, 275 pages. Illustrated. Longmans, Green & Co., London, New York and Bombay.

STUDIES IN THE PSYCHOLOGY OF SEX. By Havelock Ellis. 8vo, 275 pages. F. A. Davis Company, Publishers, Philadelphia, New York and Chicago.

OBSTETRICS. A Manual for Students and Practitioners. By Dr. D. J. Evans. 8vo, 409 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $2.25.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1898-99. Vol. I. and II. Washington, D. C.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION. Thirty-second Annual Session. 8vo, 400 pages. Illustrated. Austin, Texas.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. For Students and Practitioners. By Dr. J. H. Musser. Fourth Edition, Revised and Enlarged. 8vo, 1104 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $6.00.

KROLL'S STEREOSKOPISCHE BILDER ZUM GEBRAUCHE FUER SCHIELENDE. Dr. R. Perlia. Fuenfte. verbesserte und vermehrte Auflage. Leopold Voss, Hamburg.

DISINFECTION AND DISINFECTANTS. By Dr. H. M. Bracken. 12mo, 87 pages. Trade Periodical Company, Chicago, Ill.

ENCYCLOPEDIA MEDICA. Editorship of Dr. Chalmers Watson. Vol. II., Brachial Plexus to Digestion, 562 pages; Vol. III., Diphtheria to Food, 546 pages; Vol. IV., Foot to Hernia, 534 pages. Longmans, Green & Company, New York, London and Bombay.

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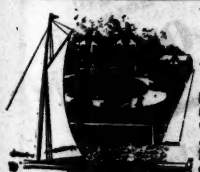

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